Travel Work survey

THE CITY OF CALGARY
Planning Policy
Data Management and Forecasting
April 2000

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EXECUTIVE SUMMARY

The Data Management and Forecasting Division of Land Use and Mobility collected information on 'place of work' and 'travel to work' as part of the 1999 Calgary Civic Census. This data will be used to monitor and forecast travel demand and may also be of interest to a diverse audience beyond those concerned with transportation in Calgary. Some key results are summarised in the following tables and figures.

Table E-1 shows a summary of some major indicators of employment and travel in the city. In the table, the term "no fixed place of work" describes people who do not have a permanent place of work. For example: taxi drivers drive for their job; repair and service people go to work at several places during the day; and construction workers work at one place one day, and a different place the next. Where possible, the first place a person went to on the last day they worked before the survey, was collected. This was not possible for all of the people with "no fixed place of work."

Table E-1: 1999 City Wide Summary of Employment and Travel to Work

Total population			**842388**
Total employed persons			**457343**
Employed persons per capita			**0.543**
Total jobs			**463,500**
Jobs in Downtown (Central Business District or CBD)			**102,100**
Jobs by work type	Fixed place outside the home		**376,800**
	Work at home		**23,000**
	Telecommuters		**2,900**
	Beyond daily commute		**8,200**
	No fixed place of work	- location provided	**35,800**
		- location not provided	**16,800**
Percent of daily work trips that occur in the a.m. peak hour			**37.3%**
Mode of travel to work (all day)		- Auto	**78.0%**
		- Transit	**15.4%**
		- Walk	**5.2%**
		- Other	**1.3%**

The 1999 Civic Census Travel to Work Survey collects information on people living within the Calgary city limits. Many people living outside Calgary work in Calgary. Statistics Canada collects information during the Federal Census on employees and their place of work. From the 1996 Federal census the number of fixed jobs located within Calgary, but held by non-Calgarians, was 29,520. Extrapolating this number using job growth within the city limits to 1999 values increases the number to 34,300. From the 1996 Federal Census, the number of downtown jobs held by non Calgarians was 3,970. Again, using the job growth rate in the CBD, the 1999 value is approximately 4,600.

Subtracting the 19,200 jobs outside Calgary held by people living in Calgary, and adding the 34,300 jobs in Calgary held by people living outside Calgary, produces an estimate of 478,600 for the total number of jobs within Calgary. Adding the 4,600 jobs in the downtown held by people living outside Calgary to the 102,100 jobs in the downtown held by people living in Calgary, produces an estimate of 106,700 for the total number of jobs in the downtown.

Jobs held by people living outside Calgary, and the work trips they make, have not been included in any of the results presented in this report. However, travel in Calgary made by people living outside of Calgary is included in all of the City of Calgary's travel forecasts.

The following seven tables provide the key information for those wanting an overview of the report. All of the material provided in these tables is repeated in the detailed report starting on page 1.

The city's population at the time of the 1999 Civic Census was 842,388. Figure E-1 shows how the population, employment (the number of people living in the area who are employed), and jobs were distributed to the different sections of the city. The percentages represent the proportion of the total city population, employment and jobs in each section.

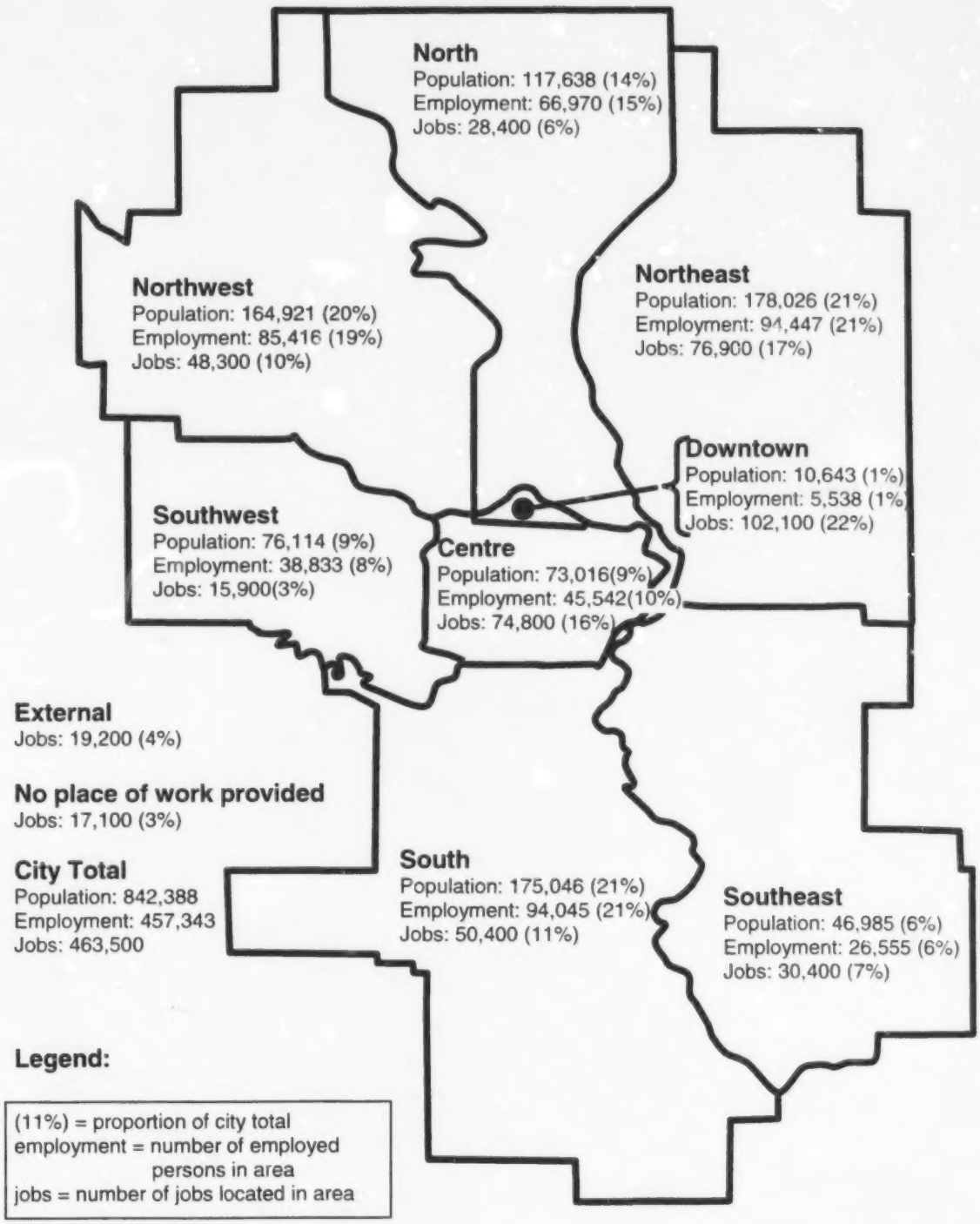


Figure E-1: Population, Employment and Jobs by Area of the City - 1999

Figure E-2 divides the city in an east-west axis and shows the population, employment (the number of people living in the area who are employed), and jobs in the east, west and downtown areas for 1999. The percentages shown represent the proportion of the total city population, employment and jobs in each area.

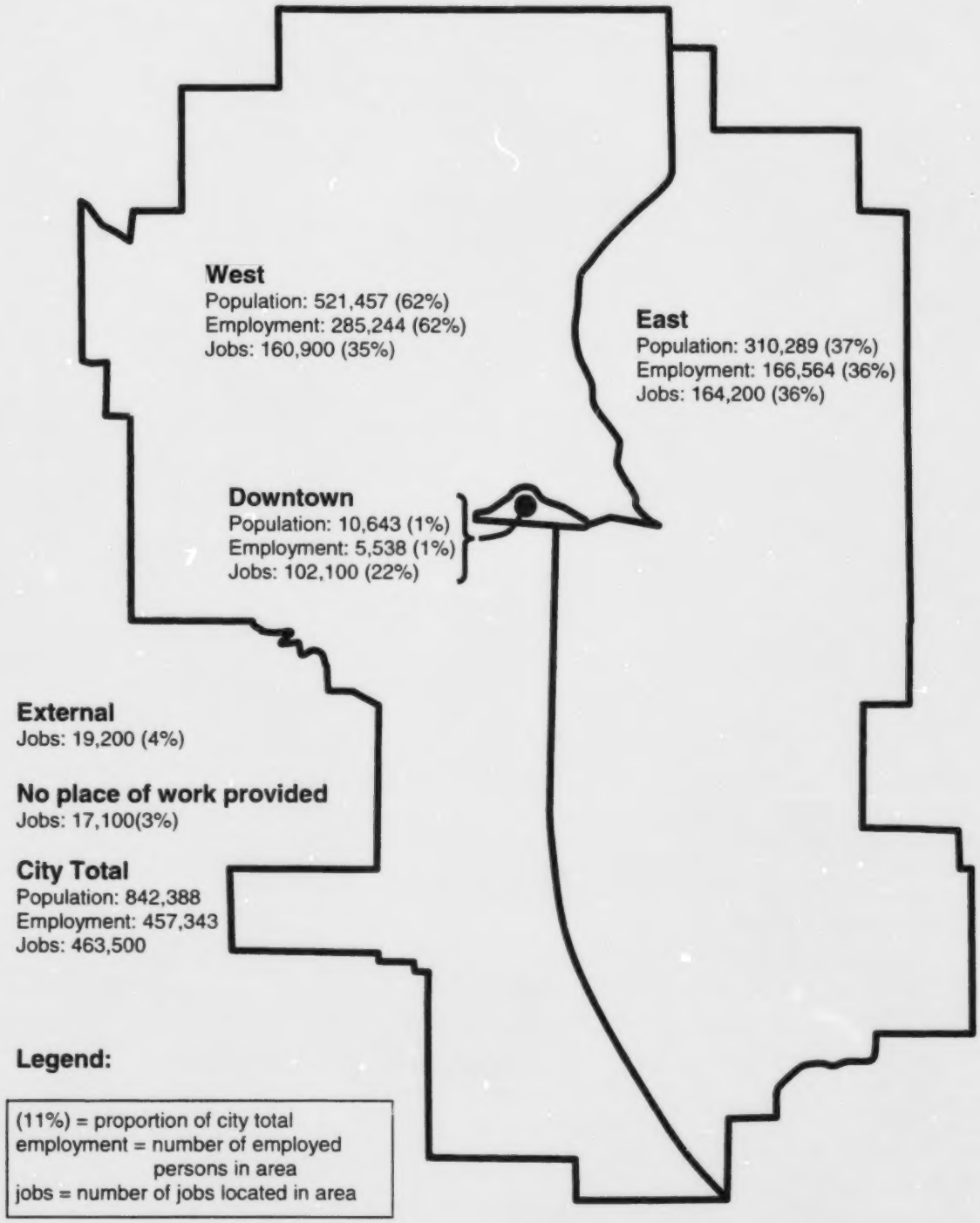


Figure E-2: Population, Jobs and Employment by East and West Sections of the City - 1999

The city's population increased by 75,329 people from 767,059 in 1996 to 842,388 in 1999: an 9.8% increase. Figure E-3 shows the population growth in sections of the city from 1996 to 1999. The percentages shown represent the proportion of the total city growth that occurred in each section.

Figure E-3: Population Growth – 1996 to 1999

Jobs in the city increased by 63,000 from 400,500 in 1996 to 463,500 in 1999: a 15.7% increase. Figure E-4 shows the job growth in sections of the city from 1996 to 1999. The percentages shown represent the proportion of the total city growth that occurred in each section.

The Southwest section shows a decline in the number of jobs due to the closure of the Canadian Forces Base. Similarly the normal increase that would be expected in the North section was dampened by the closure of the Bow Valley Centre Hospital. The closure of the Bow Valley Centre Hospital meant jobs moved to zones that included the Foothills Hospital in the Northwest, the Peter Lougheed Hospital in the Northeast, and the Rockyview Hospital in the South.

The downtown and centre areas showed substantial growth at 22% and 15% respectively, relative to the growth of 6% and –9% respectively between 1991 and 1996.

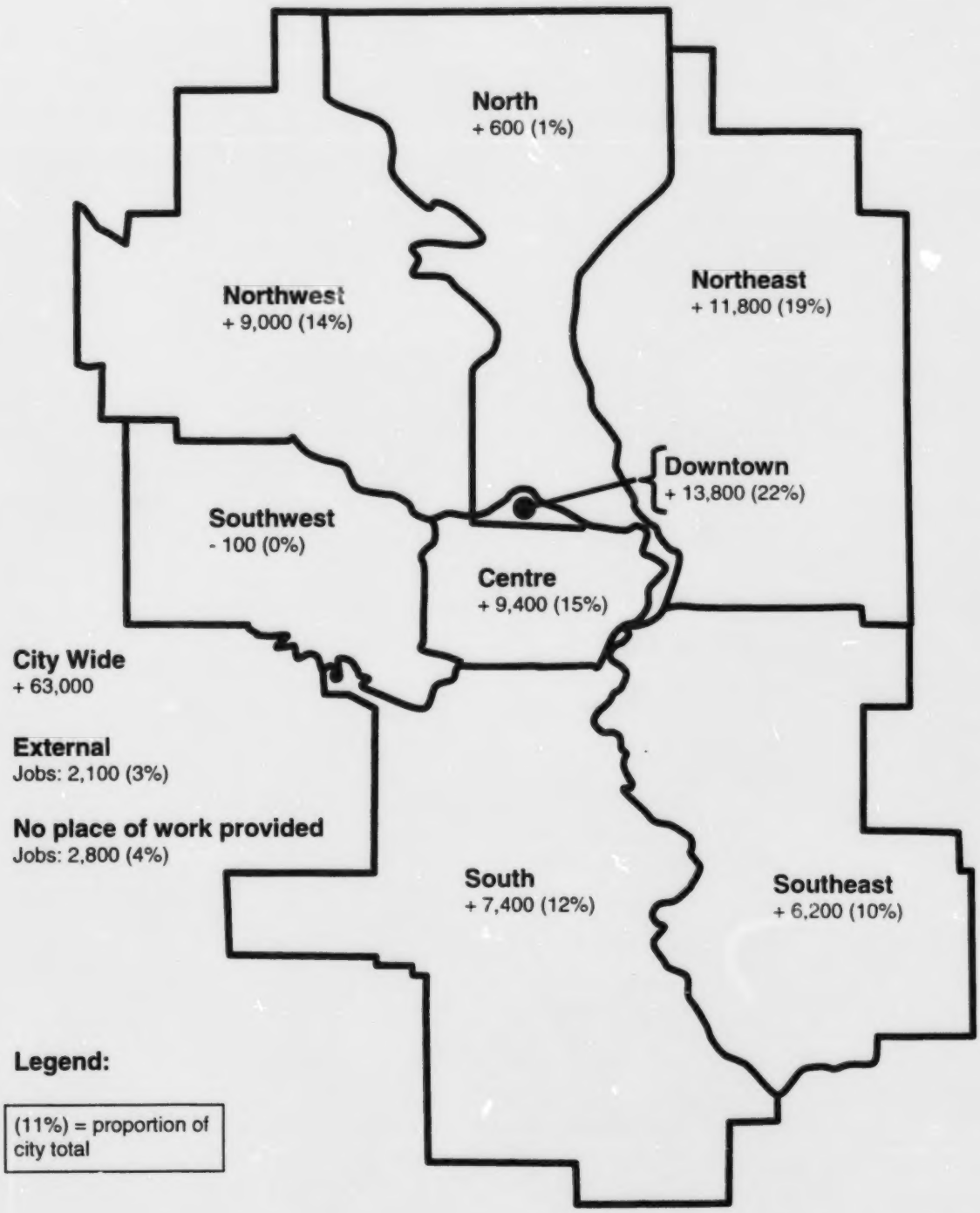
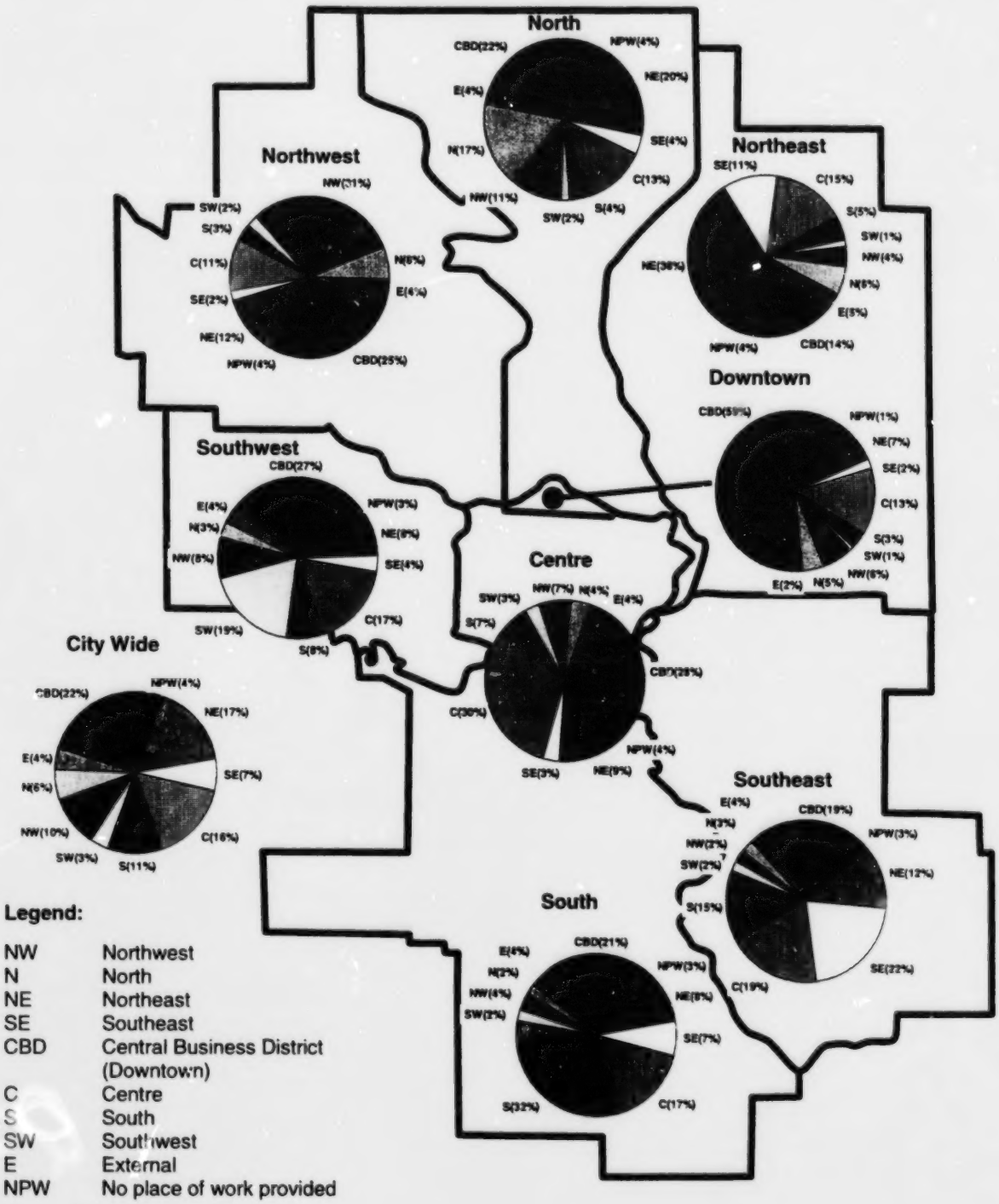


Figure E-4: Job Growth – 1996 to 1999

For all sections of the city, many people both live and work in the same section. Figure E-5 shows the location of work for persons who live in each section. For example, although on a city wide basis only 10% of the people work in the Northwest, 31% of the jobs held by people living in the Northwest are in the Northwest.



Legend:

NW	Northwest
N	North
NE	Northeast
SE	Southeast
CBD	Central Business District (Downtown)
C	Centre
S	South
SW	Southwest
E	External
NPW	No place of work provided

Figure E-5: Work Location Relative to Home Location - 1999

The transportation survey associated with the Census also collected information on modes of travel for work. Figure E-6 shows the mode of travel (auto, transit and walk) for trips from home, to work in the downtown. The data shown is for all day travel.

The auto mode is the dominant mode of travel for all sections except the Downtown, Centre and Northeast. For people who both live and work in the downtown, "walk" is the main mode of travel. In the Northeast, the mode of travel to the downtown is nearly evenly split between auto and transit. In the Centre section, auto trips account for 42% of the travel, but the walk mode is very important. The only other sections having a walk component are the North and Northwest: where they share a boundary with the Downtown.

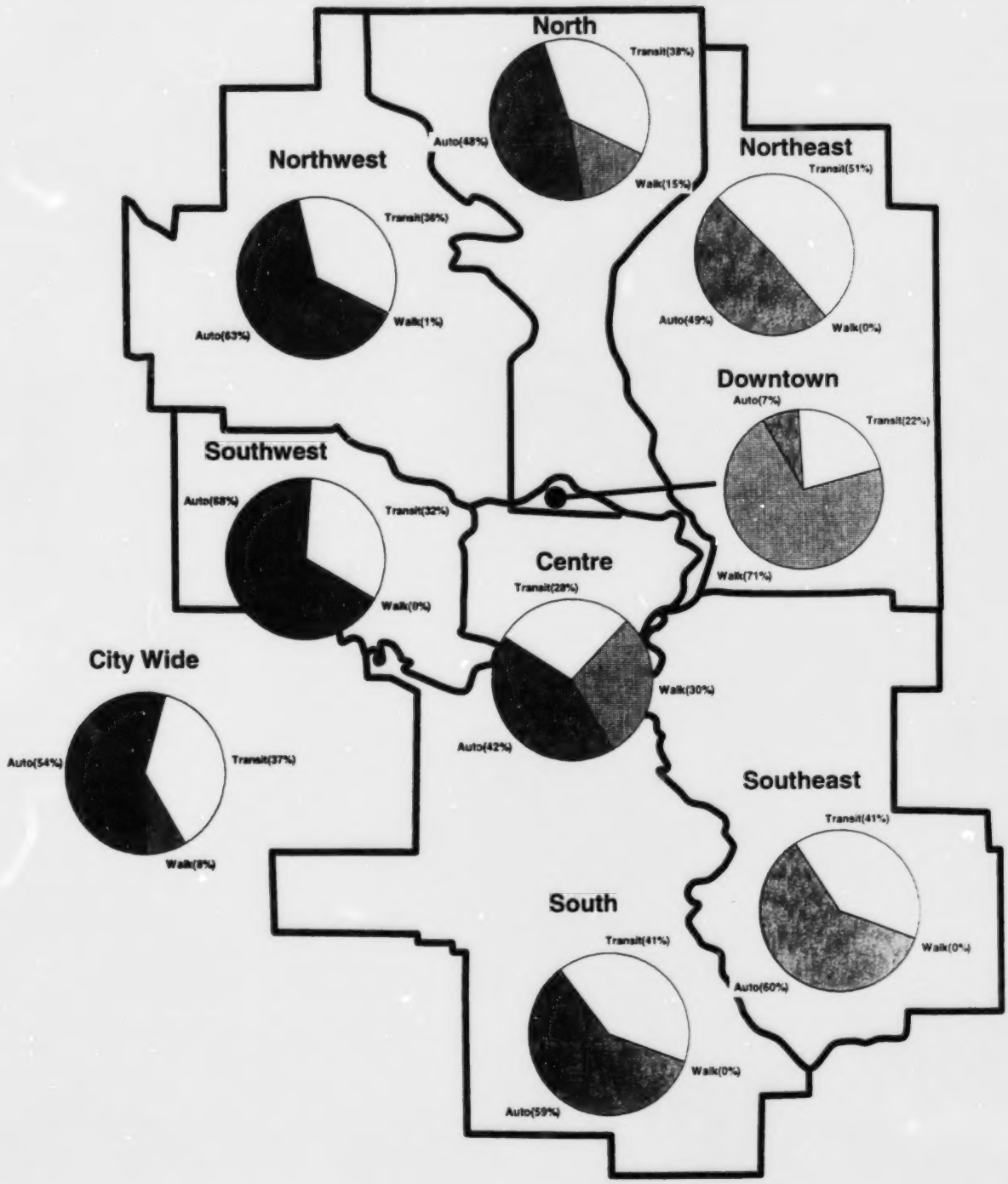


Figure E-6: Mode of Travel for Downtown Work Trips - 1999

When looking at mode of travel for non-Downtown destinations, it is clear that a much smaller proportion of the work trips is made by walk or transit. Figure E-7 shows the mode of travel (auto, transit and walk) for trips from home to work that are going to somewhere outside the Downtown. On a city wide basis, 86% of the daily work trips, to locations outside the Downtown, are made by automobile.

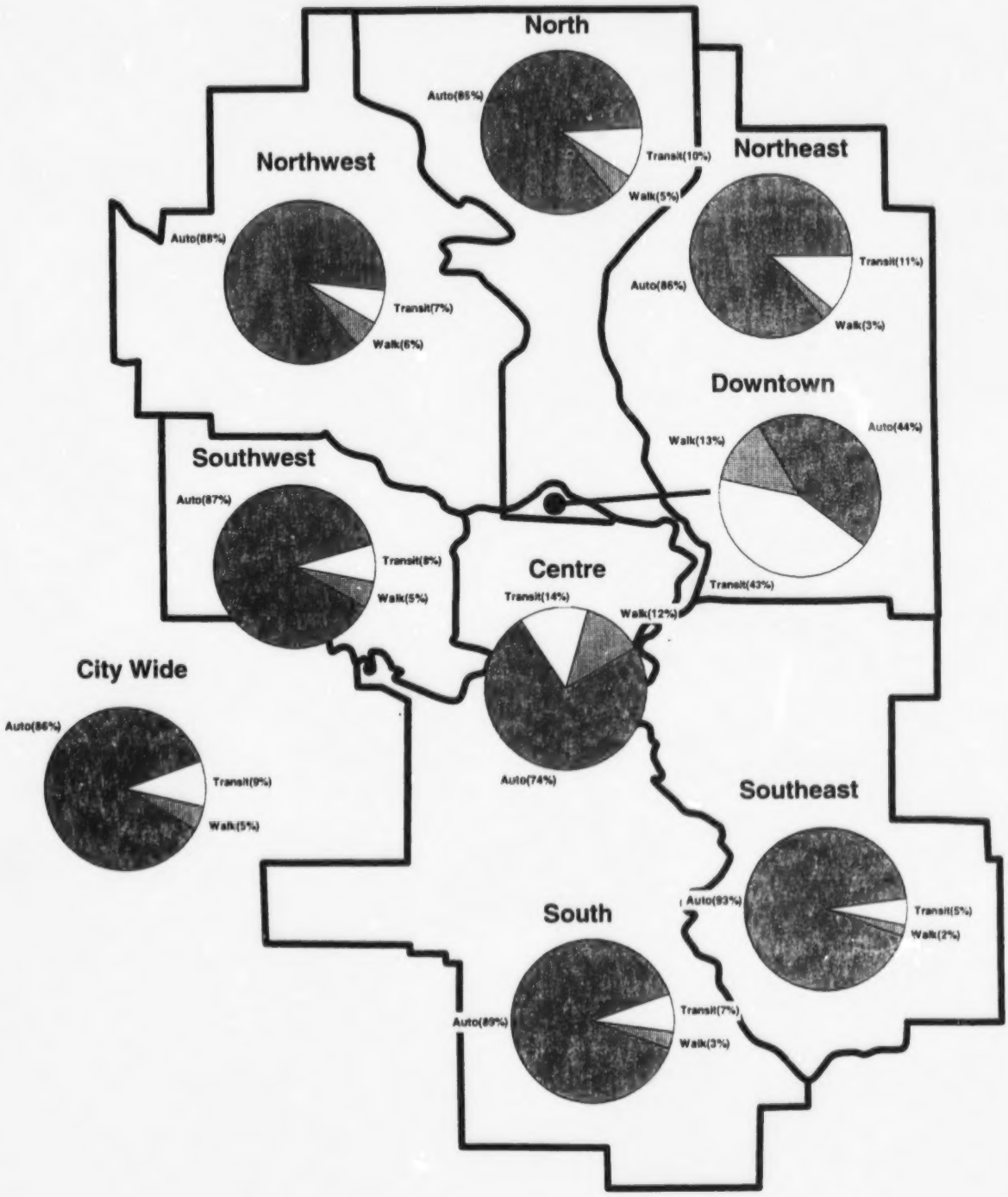


Figure E-7: Mode of Travel for Non Downtown Work Trips - 1999

Summary

Overall the results of the 1999 Civic Census Travel to Work Survey show a significant diversion from the moderate growth trend found between 1991 and 1996.

- Since 1996 the City has experienced an increase in growth in both population and jobs.
- The population growth is concentrated on the outer edges of the city. The population split between east and west is not changing and is weighted toward the west.
- Much of the population growth has been in areas where the transit modal split is below average.
- Employment in Calgary has grown to 463,500, a jump of 60,000 jobs in the last three years. This exceeds the previous job growth high between 1979 – 1981 when employment increased by 53,000 jobs.
- Over 54.3% of Calgarians are employed both full time and part time, exceeding the previous high of 52.5% in 1981.
- Calgarians working at home have increased marginally from 22,800 to 23,000 in the last three years.
- Figures show that there are 102,100 jobs in the downtown held by Calgarians, an increase of 16% or 13,800 in the last three years. This breaks the previous record growth in downtown jobs set in the period between 1979 - 1981. Based on previous surveys there are an additional 4,600 employees who live outside of Calgary that work downtown making the total of downtown jobs 106,700.
- One third of the new jobs created are in the southeast and northeast Industrial areas.
- The trend of constantly decreasing modal split to transit has reversed and modal split is increasing, especially to the downtown.
- The survey shows that 16.5% of all Calgarians take Calgary Transit to get to work up from 14.5% three years ago.
- Calgary Transit is the mode of transportation for 41% of Calgarians who work downtown, up from 37% in 1996.
- Crosstown travel appears to be abating somewhat since 1996.

- The proportion of Home to Work trips that are made during the morning peak hour continues to decline.

- The automobile remains the primary mode for work trips accounting for 78.0% of total work trips.

Travel to Work survey

1996

Detailed Report

1.0 INTRODUCTION

The purpose of this report is to provide a general overview of 'work trip' travel characteristics in Calgary based on the 1999 Civic Census Work Travel Survey. This will make available information that can be used when considering policy directions for transportation and landuse planning in Calgary.

The City of Calgary began a series of travel surveys in 1958. Data from these surveys have been used to monitor and forecast travel demand in Calgary. The City of Calgary has done several different types of surveys during this period. Data from two types of surveys are used in this report.

- Comprehensive household travel surveys: This type of survey collects information on all travel in a sample of homes. It includes work and non work travel. Surveys of this type were done in 1958, 1964, 1971, 1981 and 1991. Currently work is underway on the design of a similar survey for 2001.

- Work travel surveys: This type of survey, done as part of the Civic Census, collects information on place of work and travel to work. The trip from home to work comprises the largest component of travel in the peak hours in Calgary. Surveys of this type were done in 1976, 1979, 1985, 1988, 1996 and 1999. Similar surveys, collecting only place of work data, were done in 1981 and 1991. A survey is planned for 2001 that will be similar to the 1981 and 1991 surveys.

The two types of surveys have some important differences. The comprehensive surveys found that on any given day, not all employed people make a trip from home to work. In 1991 the Calgary Travel Survey found that about 18.6% of employed people did not go to work on a typical work day. In the work travel surveys, data is collected for the work trip, even if no trip is made on a given day. This makes comparisons of the number of trips between the two types of surveys less useful. These comparisons have been avoided in this report.

The comprehensive surveys found that many people make intermediate stops on their way to work. The work travel surveys assume that all trips are directly from home to work. The proportion of trips is not large, but it could make some comparisons between the two types of surveys less useful.

The 1999 Civic Census Work Travel Survey was conducted as part of the City of Calgary's annual Civic Census in April 1999. At each household in the city, the number of residents and employed persons is collected. At about one in 10 households, all of the employed people were asked questions on their place of work, how they travelled to work and what time they arrived at work. This information was recorded on the survey form given in Appendix A. After excluding surveys with refused or incomplete data, a final sample rate of 8.5% was achieved. Survey results have been rounded off in this report.

The information presented in this report represents **travel to work** over a **24 hour** period. Other documents available from the Data Management and Forecasting, Planning Policy, Land Use and Mobility report travel for all purposes and during the a.m. peak hour. Users are advised to be aware of the time period being used (24 hour or a.m. peak hour) when comparing data from the various reports.

2.0 POPULATION, EMPLOYMENT AND JOBS

Table 1 shows the total population and employment in Calgary from the 1999 Civic Census. Because some Calgarians hold more than one job, the number of jobs in the city is higher than the number of employed persons.

Table 1: 1999 Civic Census and Work Travel Survey Totals

Total population	842,388
Total employment (employed persons)	457,346
First jobs	457,300
Second jobs	5,900
Three or more jobs	300
Total jobs	463,500

2.1 DISTRIBUTION OF POPULATION, EMPLOYMENT AND JOBS

Figure 1 shows the distribution, in eight sections of the city, of population, employment and jobs. The "employment" in a section is the number of people living in the section who are employed; while "jobs" are the number of jobs located within the section. The values for population and employment are from the main census form and were collected at all households in the city. The number of jobs was obtained from the Work Travel Survey and was rounded off to the nearest 100. The percentages in the figure represent the proportion of the total city population, employment and jobs in each section.

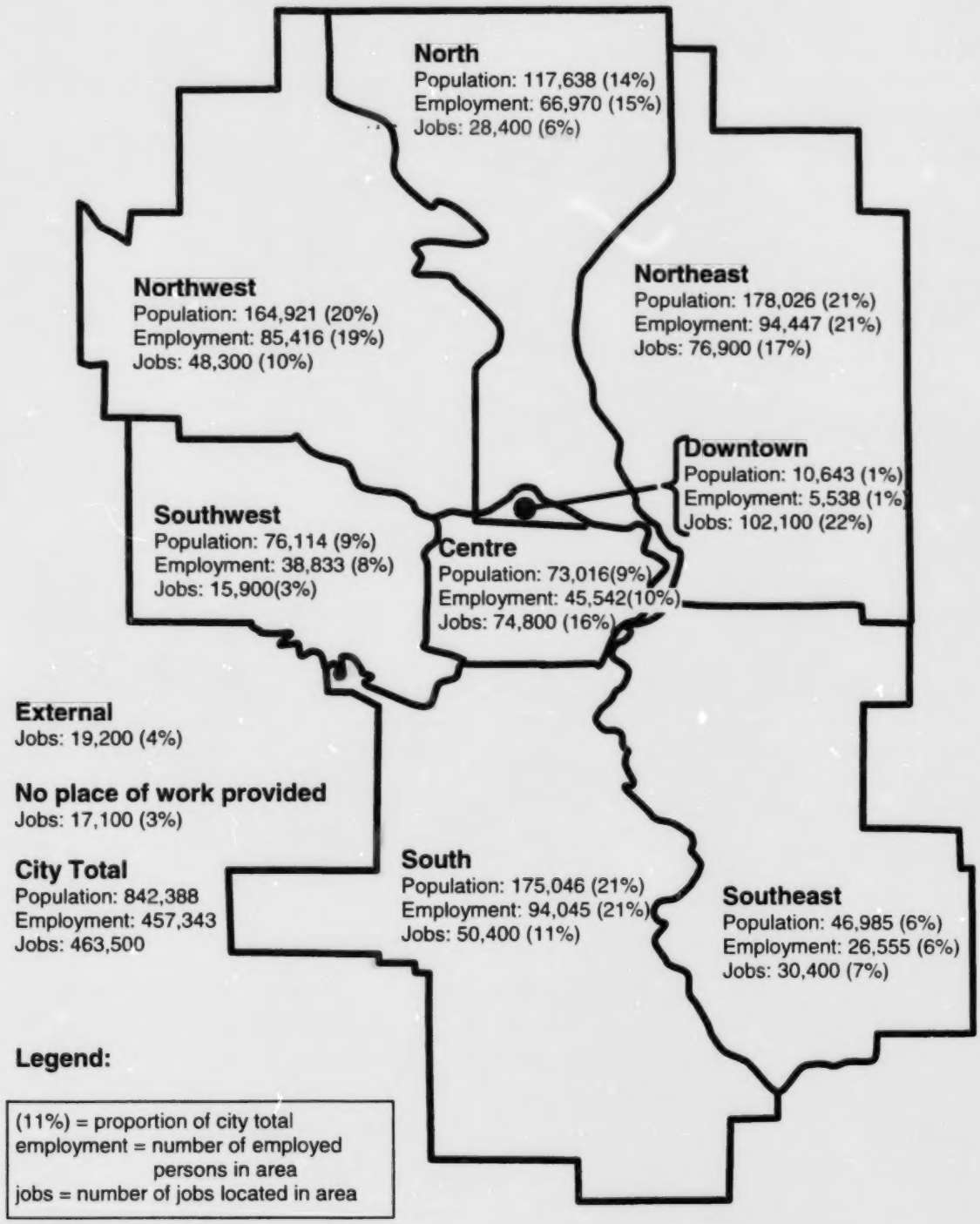


Figure 1: Population, Employment and Jobs by Area of the City -1999

Figure 2 shows the distribution of population, employment and jobs with the city divided into downtown, east, and west areas. Most of the population is on the west side, while the east has more of the jobs.

In 1999, 22% of the total city jobs were in the downtown. (The downtown, as defined in this report, is the area between the Bow River and the CPR tracks). In this case, with the north-south axis drawn as shown, the remaining jobs, for which a location within the city was provided, are split almost evenly between the east and west areas. There is, however, a disproportionately high amount of the population on the west side of the city. In the west area, and excluding the downtown for this consideration, there is a ratio of 0.31 jobs per person. On the east side, there are 0.53 jobs per person. Generally then, the people on the east side of the city have more jobs in close proximity to where they live.

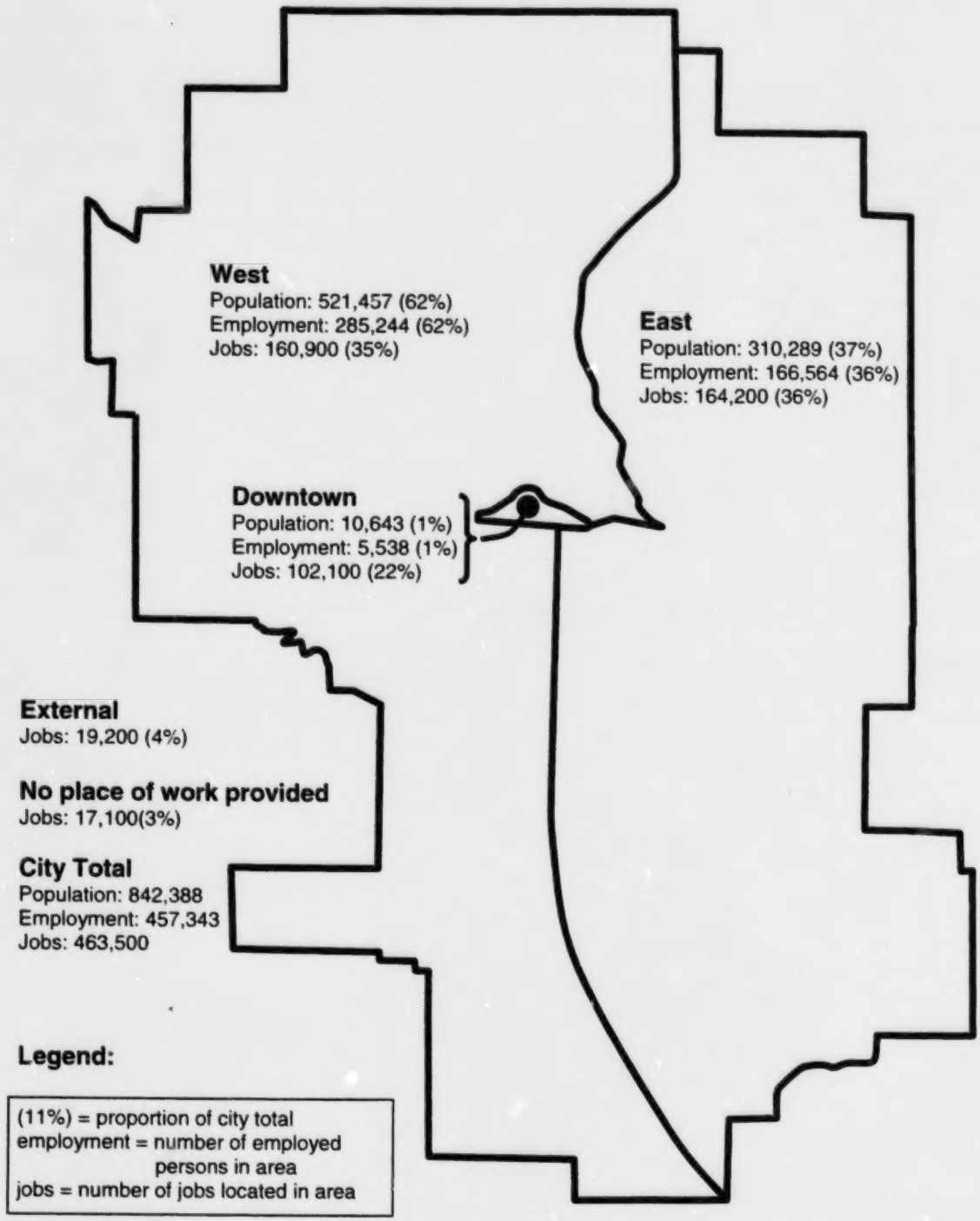


Figure 2: Population, Employment, and Jobs in the East, West and Downtown Areas of the City - 1999

2.2 POPULATION GROWTH

Figure 3 shows the change in the population in each section of the city between 1996 and 1999. The figure shows the absolute growth in population and the *proportion of the total city growth* that each section attracted. The Northwest was the largest growth area in terms of both number and proportion. The Southeast, that currently has only a small proportion of the overall population (Figure 1), attracted a high proportion of the growth.

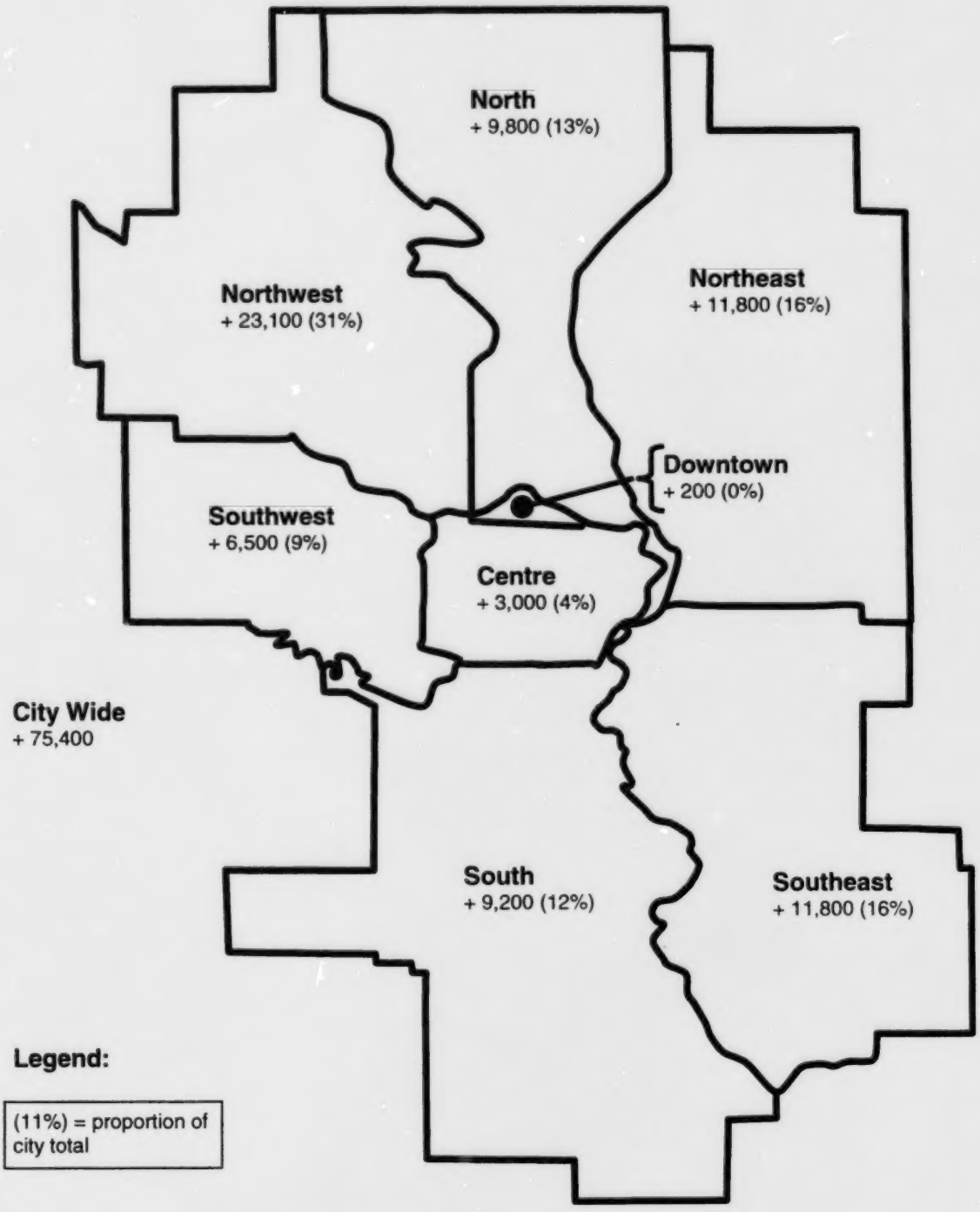


Figure 3: Population Growth – 1996 to 1999

2.3 JOB GROWTH

Jobs in the city increased by 63,000 from 400,500 in 1996 to 463,500 in 1999: a 15.7% increase. Figure 4 shows the growth in total jobs in Calgary from 1964 to 1999. It shows clearly the effect of the 'boom' period of the late 1970's and the subsequent downturn. The period between 1996 and 1999 saw revitalised growth in the city in terms of jobs and population.

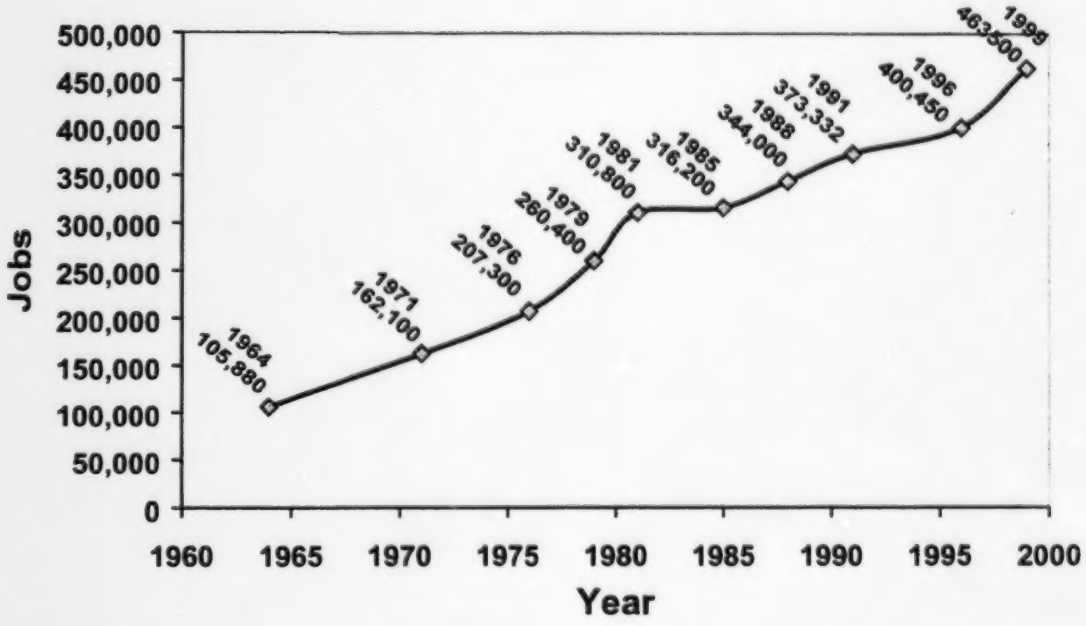


Figure 4: Growth in Total Jobs – 1964 to 1999

Figure 5 shows the job growth in sections of the city from 1996 to 1999. The percentages shown represent the proportion of the total city growth that occurred in each section. The closure of the Bow Valley Centre impacted the number of jobs in the North section. Also the closure of the Canadian Forces base in Southwest Calgary caused an overall decrease in the number of jobs in that area.

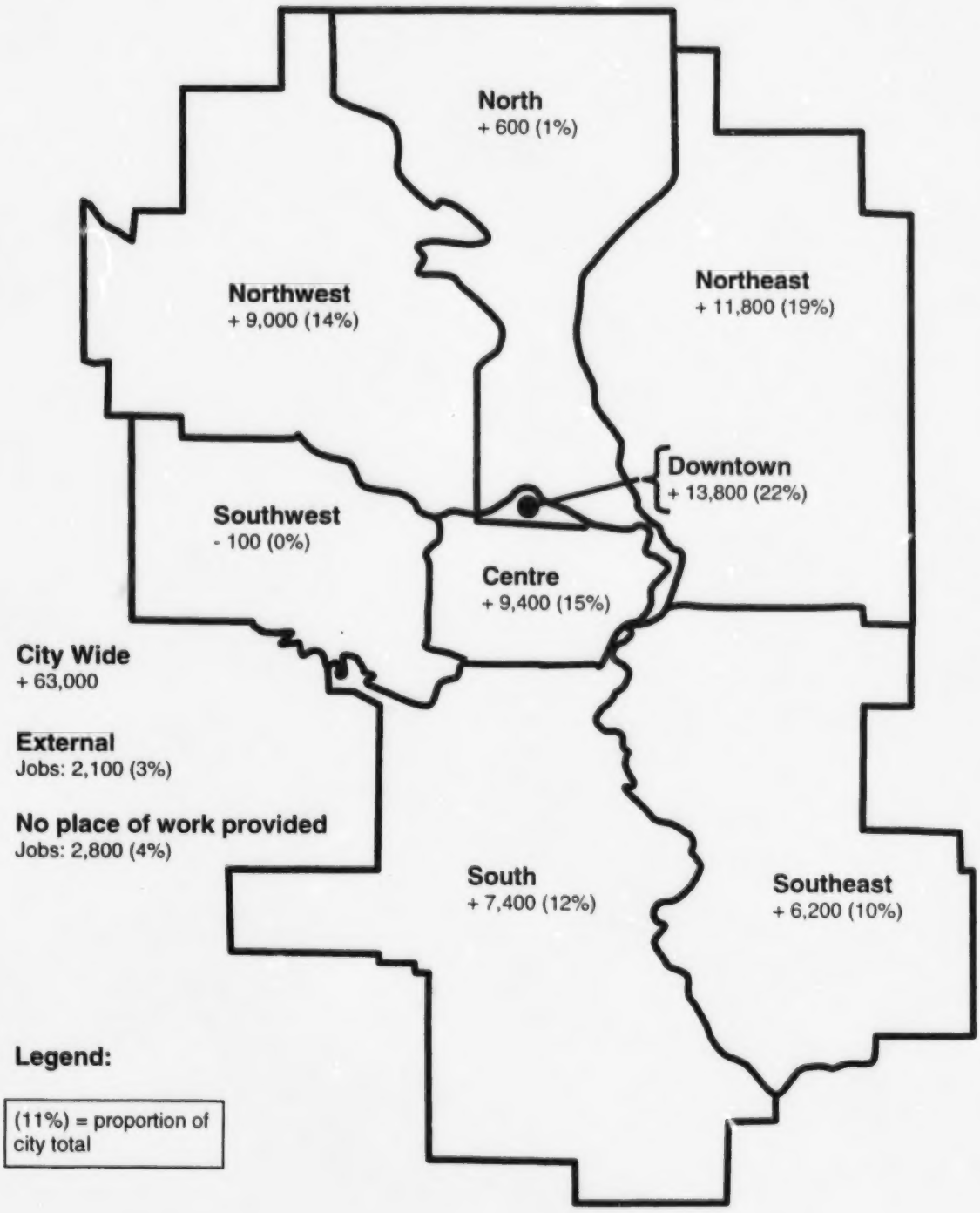


Figure 5: Job Growth – 1996 to 1999

Figure 6 shows a bar chart of the number of jobs in each section of the city from 1964 to 1999. Figure 7 shows the same information in a line graph with total jobs and percent of total. These two figures show only those jobs that have an identified place of work inside the city. The job growth trend has been quite different in different sections of the city.

The downtown showed rapid growth from 1964 to 1981, then very slow growth to 1996 and rapid growth to 1999. The Centre section also showed rapid growth from 1964 to 1981, but showed decreases in 1985 and 1996. For the Centre area the period between 1996 and 1999 showed a reversal of the trend and the Centre area added jobs. The Northeast has shown continued steady growth for the entire period from 1964 to 1996. A jump in growth is shown for the Northeast since 1996. The south has shown slow, but steady, growth from 1964 to 1996, with a period of much slower growth from 1981 to 1985. The Northwest has also had slow but steady growth from 1964 to 1996. The North has shown very little growth other than during the 1976 to 1981 period. The Southeast grew during the 1971 to 1981 period, but was then stable until 1996 when the growth increased substantially. The Southwest has had a stable pattern, with some growth in the 1979 to 1985 period and in the 1991 to 1996 period. All areas of the city show substantial growth between 1996 and 1999 with the exception of the North and Southwest sections. The smaller job growth in these areas is due to hospital and Canadian Forces Base closures.

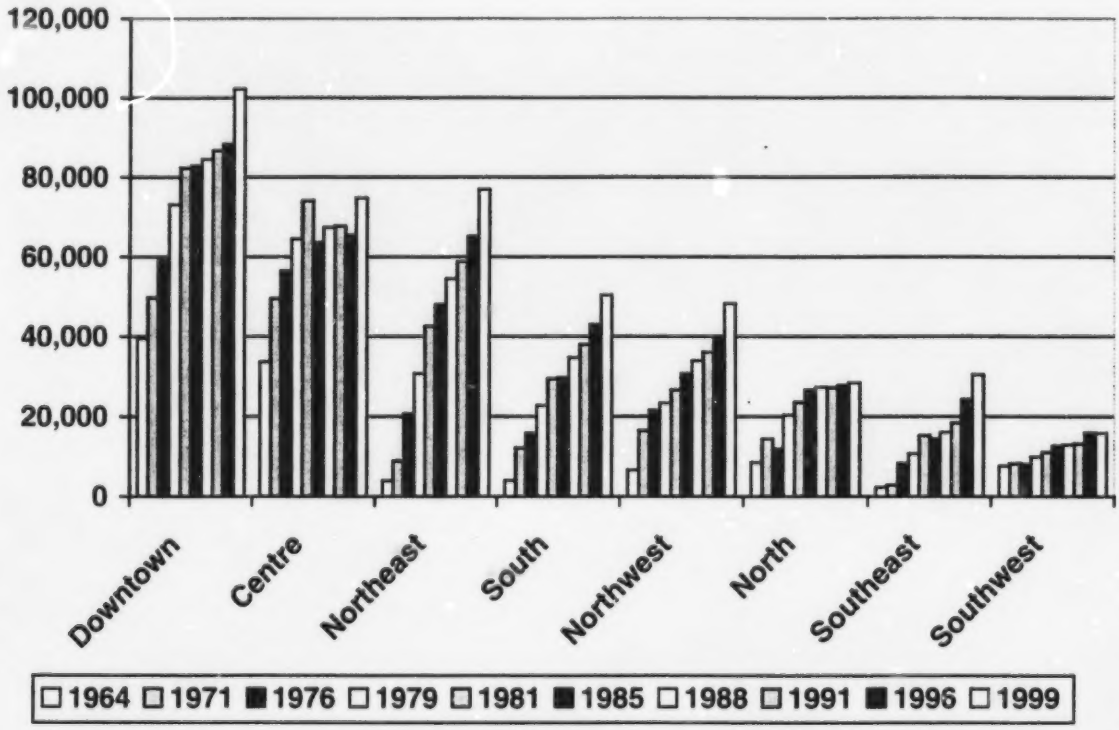


Figure 6: Number of Jobs by Section 1964-1999

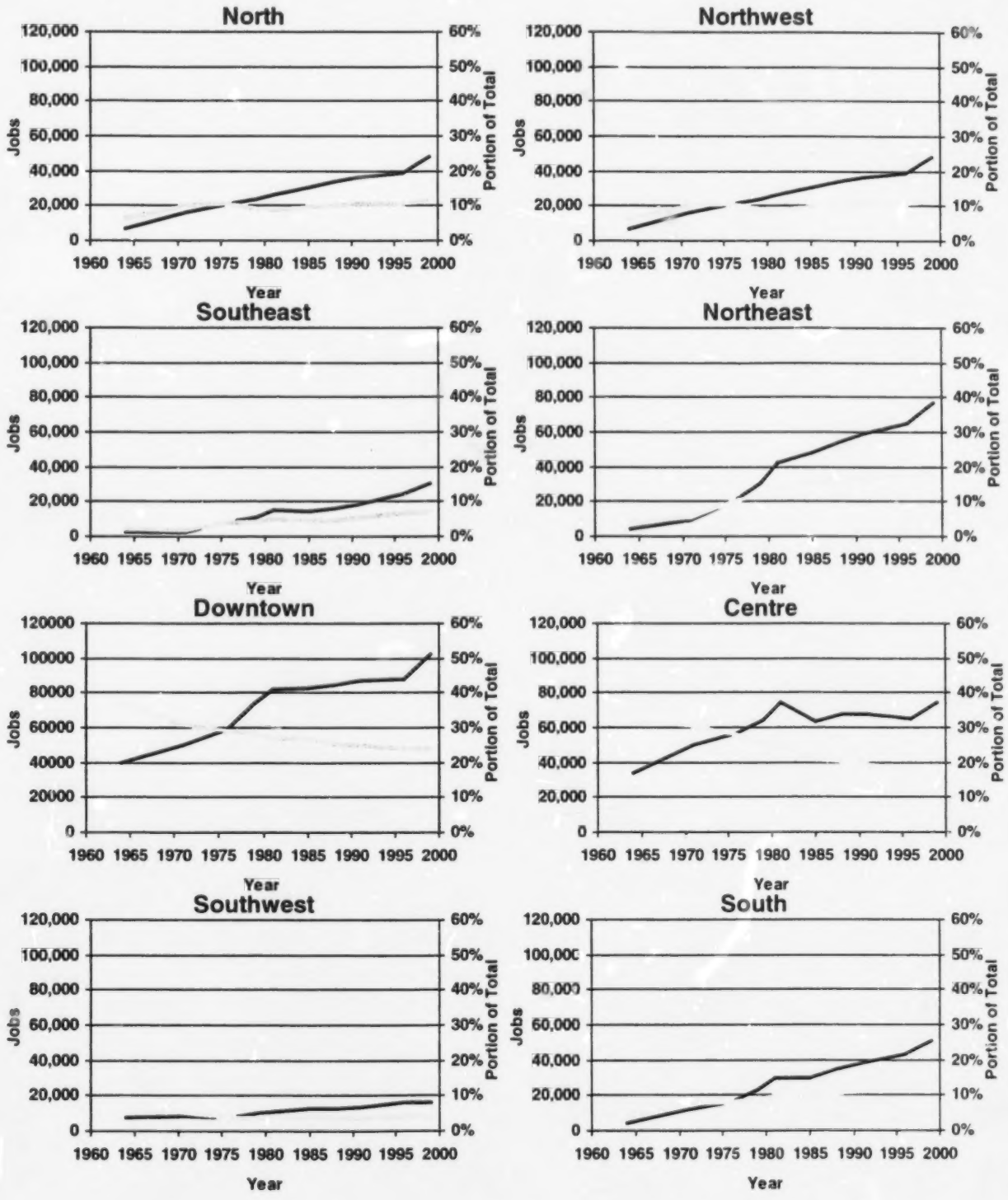
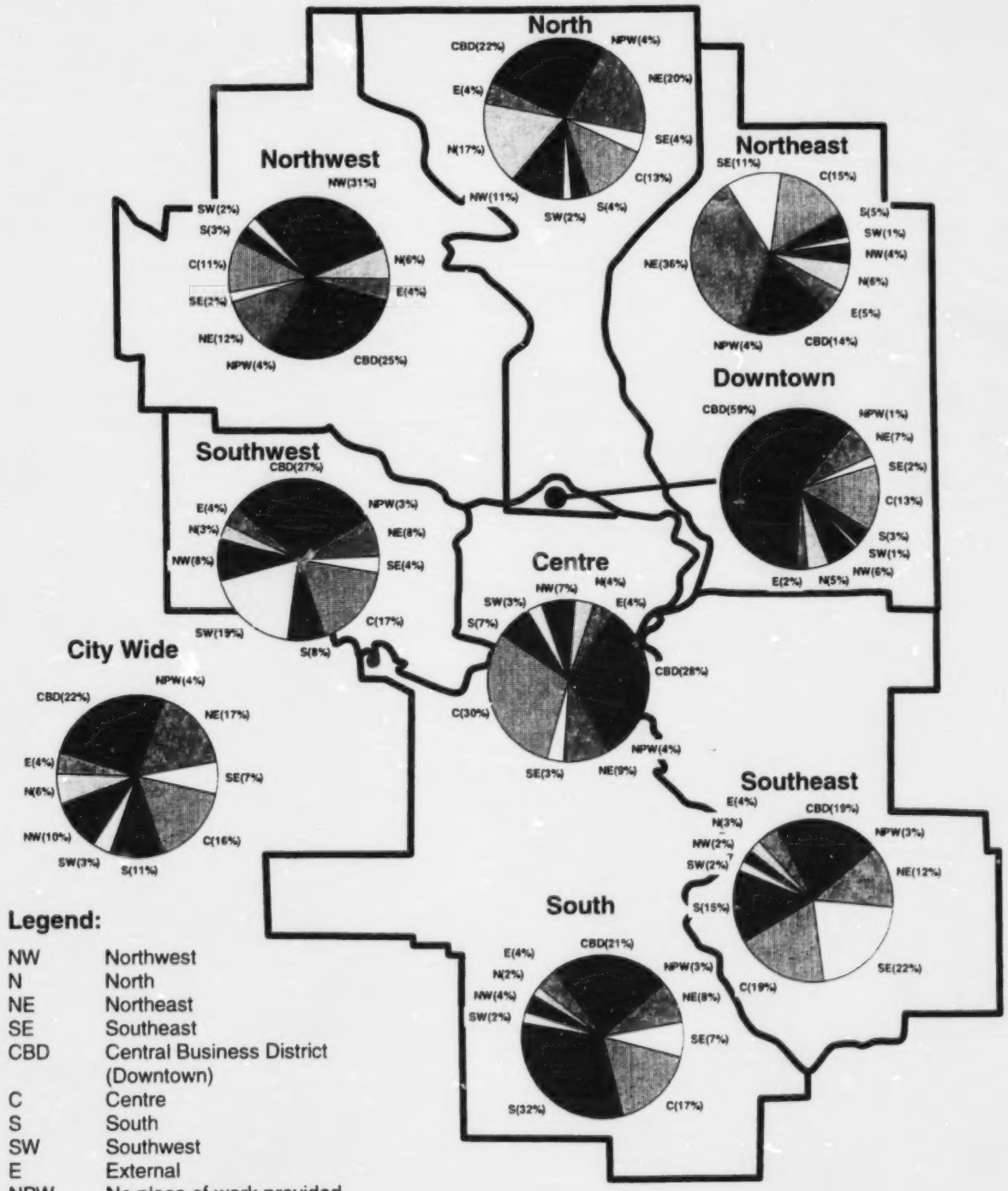


Figure 7: Number and Percent of Jobs by Section –1964 to 1999

2.4 Work Location Relative to Home Location

Figure 8 shows where people work relative to where they live. Table A-1 in Appendix A provides the same data in a table format. There are many observations that could be made when looking at this figure. For example:

- The proportion of people who work in the Downtown varies by section of the city.
- Although overall, 22% of the people work downtown, those in the Northwest show a higher tendency at 25%. Those in the Northeast and Southeast show markedly lower tendencies at 14% and 19% respectively.
- People show a strong tendency to live and work in the same section. The degree to which this occurs depends on the number of jobs in the section compared with the population.



Legend:

NW	Northwest
N	North
NE	Northeast
SE	Southeast
CBD	Central Business District (Downtown)
C	Centre
S	South
SW	Southwest
E	External
NPW	No place of work provided

Figure 8: Work Location Relative to Home Location - 1999

2.5 JOBS AND WORK TYPE

In the 1999 survey, jobs were classified into one of several work types. These classes were designed to identify types of work that would influence the trip making behaviour of the person with the job. The following list describes the work types in more detail:

1. **Work at a fixed location outside the home** - The Destination (workplace) is outside the home and it does not normally change over time. This is the most common type of work. Examples include: factory workers, sales clerks in stores, office workers and managers.

2. **Telecommuters** - This is a person, employed outside the home, but working at home most days.

3. **Work at home** - This is a person who has their work based at home. They do not have another Destination (workplace) outside the home, unlike the telecommuter.

4. **No fixed workplace (i.e. taxi driver)** - This is a person who does not have a fixed workplace because their work is done while travelling. An example would be a taxi driver who goes directly from their home to pick up passengers.

5. **Destination (workplace) may change from day to day (i.e. construction)** - This is a person who works in a fixed place, but the fixed place can change from one day to the next, or one week to the next. Examples include: some construction workers, some contractors, office temporary staff and contract workers.

6. **Works at more than one workplace during the day (i.e. salesman)** - This is a person whose job takes them to different locations during the day. Examples include: some appliance repair personnel, some sales people and some consultants.

7. **Workplace beyond daily commuting distance** - This occurs if the respondent's work is at a place far enough away that they are unable to travel to work on a daily basis. This can include places as close as Edmonton and as far away as the middle east.

Table 2 shows the number of jobs by work type.

Table 2: Jobs by Work Type – 1999

Work Type	Jobs	Percent
Work at fixed location outside the home	376,800	81.3%
Telecommuter	2,900	0.6%
Work at home	23,000	5.0%
No fixed place of work	8,100	1.7%
Place of work may change from day to day	30,100	6.5%
Works at more than one place during the day	14,400	3.1%
Place of work beyond commuting distance	8,200	1.8%
Total	463,500	

2.6 Employed Persons Per Capita

Figure 9 shows the trend in the "employed persons per capita" rate for the period 1964 to 1999. Rapid and steady growth was experienced in the period from 1964 to 1981. Between 1981 and 1996, the rate has been more stable, and declining slightly. In the period from 1996 to 1999 this rate has increased due to growth in Calgary's economy.

The earlier growth reflected changing demographics, such as the entry of women into the work force and the lower birth rate. The stability of the rate since 1981 may reflect that these underlying changes are complete.

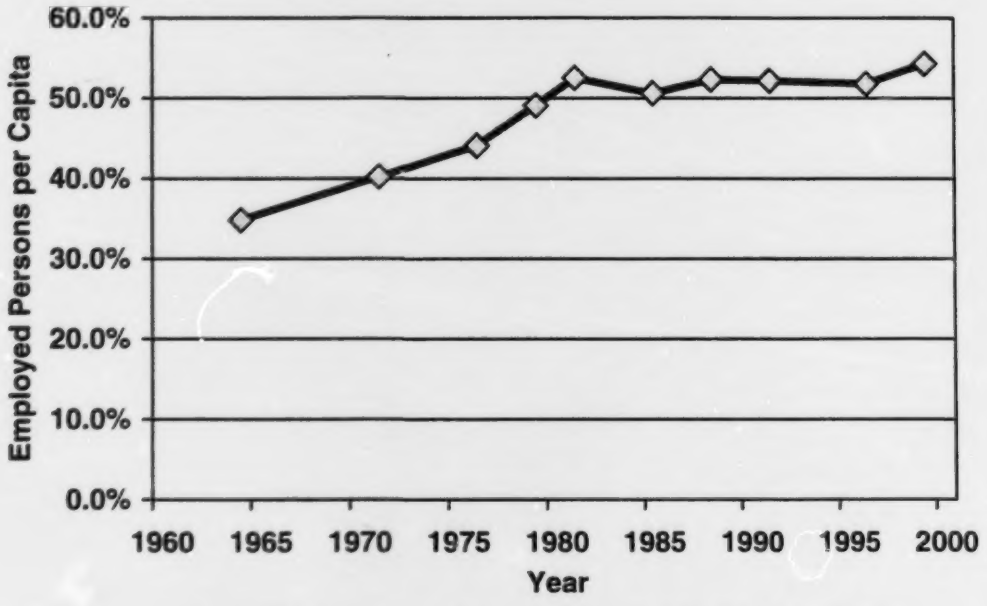


Figure 9: Employed Persons per Capita 1964 to1999

Figure 10 shows the percent employed persons per capita in each section of the city. The variation in rates in different sections of the city reflects the different housing and demographics. For example, the rate in the Centre may reflect that the section has a higher proportion of the population living in apartments. People living in apartments are more likely to be single and have no children, leading to a higher number of employed persons per capita.

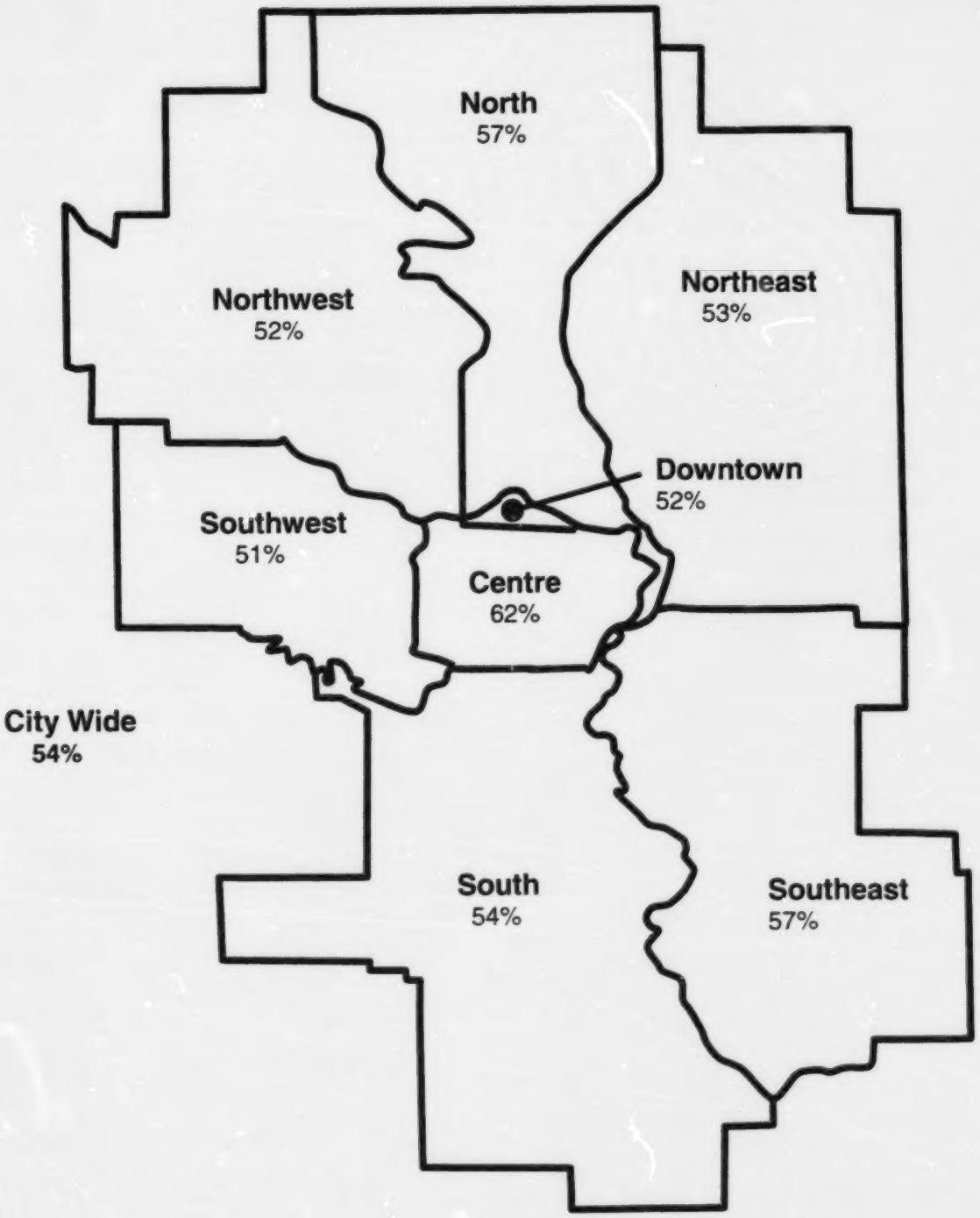


Figure 10: Employed Persons per Capita by Area - 1999

3.0 HOME TO WORK TRAVEL

3.1 WORK TRIP SUMMARY

Table 3 shows a summary of all Home to Work trips by the various modes of travel. People who have no fixed place of work are included in the total for persons making a trip to work. However, some people are classified as "persons not making daily work trips" and these are not reflected in the table. People who do not make a daily trip include people who work at home, are telecommuters, and people who work at a location that precludes a daily trip (e.g. Edmonton, Winnipeg, Beaufort Sea and Saudi Arabia).

Table 3: 1999 Daily and A.M. Peak Hour Home to Work Trips by Mode

		24-hour		A.M. Peak (7:05 to 8:05)	
Total persons making daily work trips		423,500	100.0%	159,400	100.0%
Transit		65,300	15.4%	27,600	17.3%
Auto	**Driver : No Passengers**	275,500	65.1%	98,900	62.0%
	Driver: One Passenger	22,900	5.4%	10,700	6.7%
	Driver: More than one Passenger	4,300	1.0%	1,700	1.1%
	Passenger: Only Passenger	22,900	5.4%	8,800	5.5%
	Passenger: More than one passenger	4,800	1.1%	1,800	1.1%
	Subtotal	330,400	78.0%	121,900	76.5%
Other	**Walk**	22,100	5.2%	7,900	5.0%
	Bicycle	3,800	0.9%	1,400	0.9%
	Motorcycle	200	0.0%	100	0.1%
	Taxi	800	0.2%	200	0.1%
	Handibus	100	0.0%	100	0.1%
	Other	800	0.2%	200	0.1%
	Subtotal	27,800	6.6%	9,900	6.2%

Not all people go to work every day. The 1991 Calgary Travel Survey found that about 18.6% of employed people did not go to work on a typical work day. This may be because of health, weather, vacation or because the job is part time. In the 1999 Travel to Work Survey this information was not collected, and is not reflected in this or other tables in this report.

The private auto continues to be the primary method that the people of Calgary use to travel to work. Transit and walk are also important options that many people use. Chapter 5.1 provides more information on historic trends in mode of travel for Calgarians.

3.2 PEAK HOUR FACTOR

The a.m. peak hour factor is the proportion of the daily home to work trips made during the a.m. peak hour. Figure 11 shows historical values for the peak hour factor. The peak hour factor has continued to decline over the entire period covered by surveys. This means that the proportion of work trips that are made at a time of the day other than peak hours is increasing. The 1991 survey determined that the proportion of the total trips in the peak hour that are attributable to travel to work is declining. This may reflect a reaction to increased congestion in the transportation system and/or changes in the types and conditions of jobs in Calgary. In 1999, the time of travel question was altered slightly to concentrate on arrival time at work rather than departure time from home.

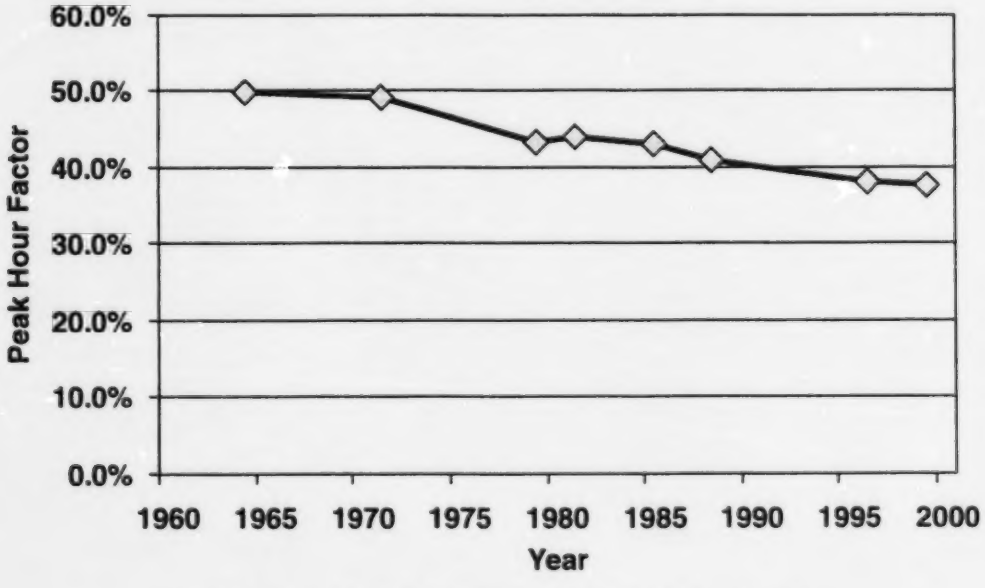


Figure 11: A.M Peak hour Factor 1964 to 1999

Figure 12 shows the peak hour factor for home to work trips *destined to* different sections. The highest peak hour factor is for trips to the Downtown - meaning that, compared with other areas, the downtown has the highest proportion of its daily work trips occurring in the a.m. peak hour. The Centre, Southeast and Northeast also have high peak hour factors. The variation across the city likely reflects the type of employment in each section. Retail and post secondary institutions contribute to low peak hour factors.

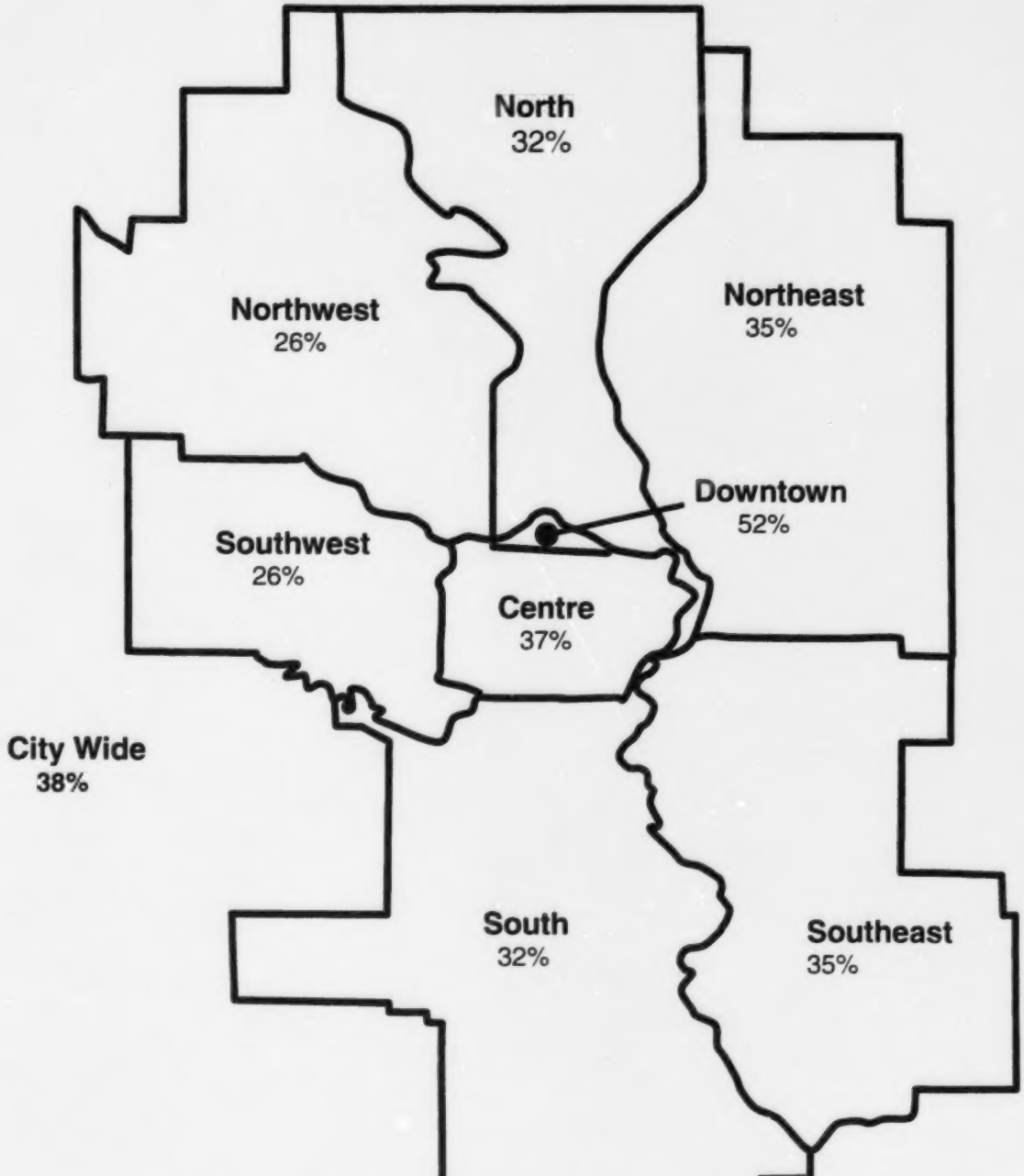
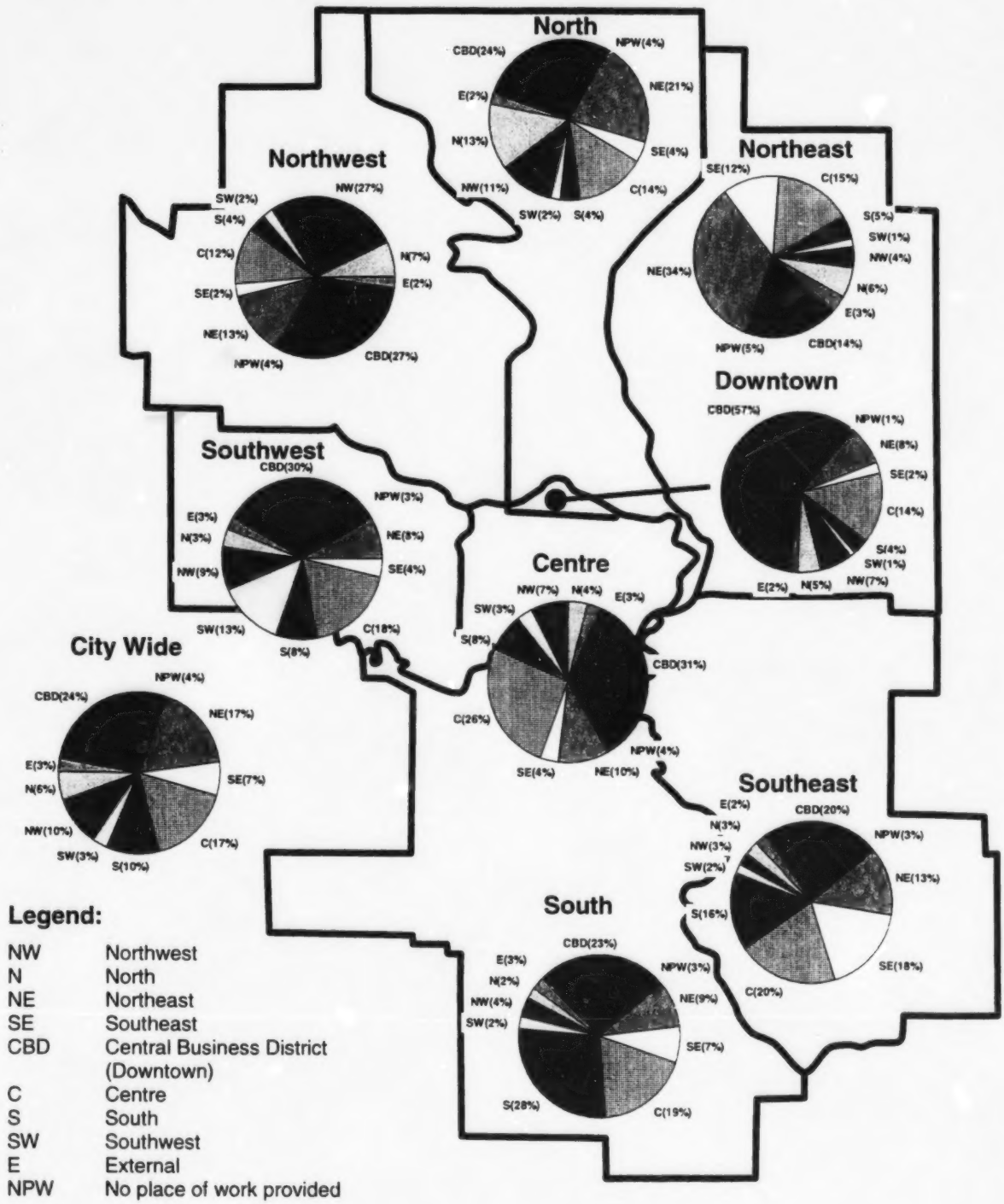


Figure 12: A.M. Peak Hour Factor by Place of Work - 1999

4.0 TRIP DISTRIBUTION

The figures in this section show the distribution of trips between home (origin) and work (destination). Figure 13 shows the proportion of home to work trips **by all modes of travel** from each section (origin) to the other sections (destinations). Table A-2 in Appendix A provides the same data in a table format. This figure differs from Figure 8 because it shows trips rather than the location of the place of work. For example Figure 8 shows that 31% of the (employed) people who live in the Northwest have jobs in the Northwest. Some of these people, however, work at home and do not need to travel for work. Consequently, Figure 13 shows that a lesser proportion (27%) of the (employed) people who live in the Northwest travel to jobs in the Northwest.

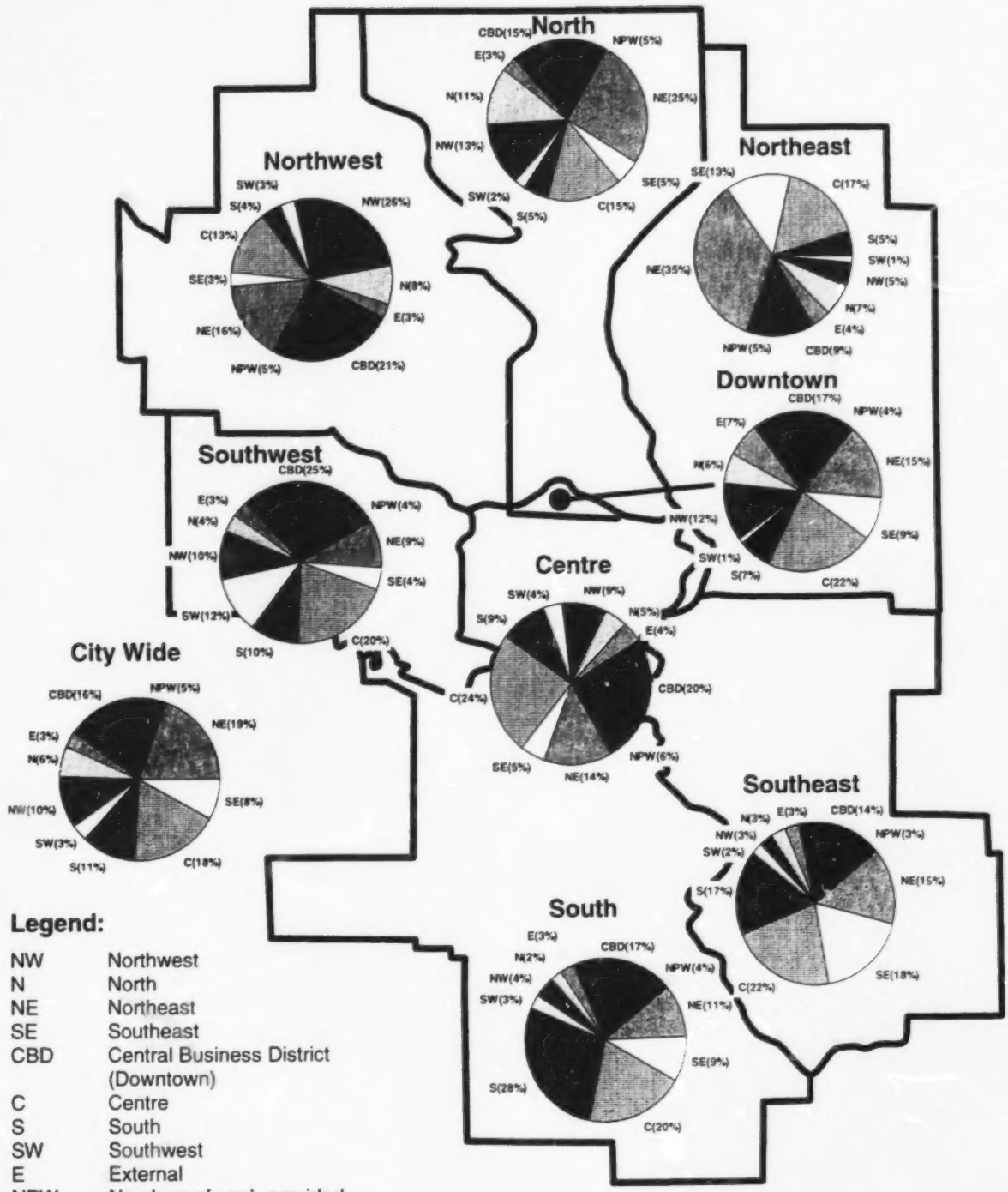


Legend:

NW	Northwest
N	North
NE	Northeast
SE	Southeast
CBD	Central Business District (Downtown)
C	Centre
S	South
SW	Southwest
E	External
NPW	No place of work provided

Figure 13: Home to Work Trip Distribution - 1999

Figure 14 shows the distribution of home to work **auto person trips (auto drivers and auto passengers)**. Table A-3 in Appendix A provides the same data in a table format. The distribution of auto trips differs from the distribution of trips by all modes. The difference is primarily because the higher use of transit and walk (and the corresponding lower use of auto) for downtown work travel shifts all the proportions for auto travel. For example, in the Northwest, although 27% of the **total** work trips are made to the downtown, only 21% of the **auto** work trips are destined for the downtown.

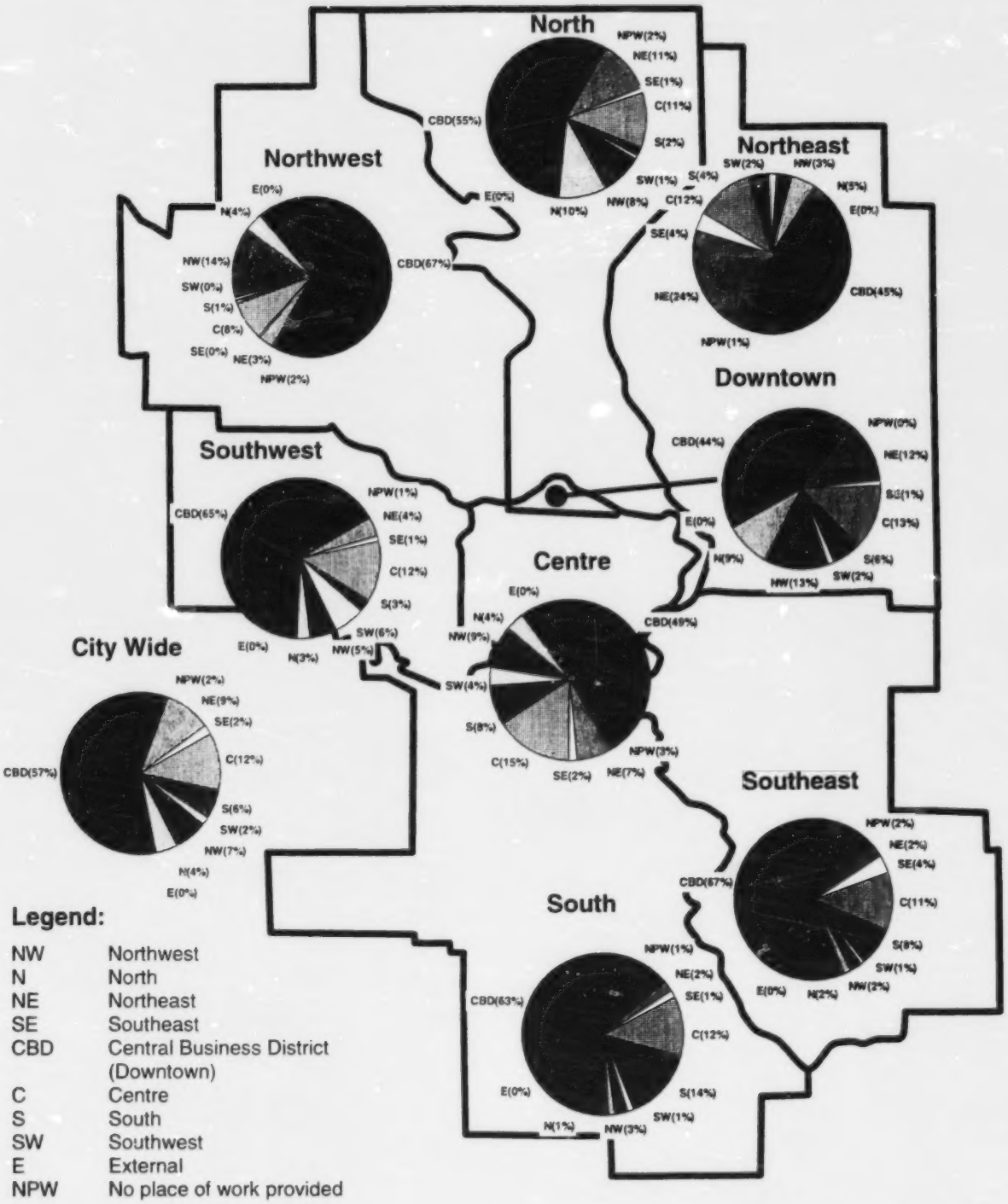


Legend:

NW	Northwest
N	North
NE	Northeast
SE	Southeast
CBD	Central Business District (Downtown)
C	Centre
S	South
SW	Southwest
E	External
NPW	No place of work provided

Figure 14: Home to Work Auto Person Trip Distribution - 1999

Transit trips, on the other hand, focus on the downtown. For example, 67% of the work trips from the Northwest, made by transit, are destined for the downtown on a daily basis. Fourteen percent of the transit work trips from the Northwest are destined for a location in that same section. Figure 15 shows the distribution of home to work **transit person** trips. Table A-4 in Appendix A provides the same data in a table format.



Legend:

NW	Northwest
N	North
NE	Northeast
SE	Southeast
CBD	Central Business District (Downtown)
C	Centre
S	South
SW	Southwest
E	External
NPW	No place of work provided

Figure 15: Home to Work Transit Person Trip Distribution - 1999

4.1 CHANGES IN TRIP DISTRIBUTION

To help in understanding how trip distribution in the city has changed over time trips from the survey, excluding people who work outside Calgary, people who did not provide a place of work and people who work at home, were assigned to one of three categories.

- Downtown - This includes trips destined to the Downtown. Trips from the Downtown to the Downtown are not included in this category.
- Sectional - This includes trips where the home and the work place are in the same section of the city, as used in previous figures in this report. Trips from the Downtown to the Downtown are included here.
- Crosstown - This includes trips where the home and the place of work are in different sections, and the place of work is not the Downtown.

Figure 16 shows how the proportions of total person trips have changed over the period 1979 to 1999. Figure 17 shows the same summary for auto trips, while Figure 18 shows the same summary for transit trips. The period between 1996 and 1999 shows a reversal of a trend for person and auto trips. Previously the proportion of crosstown trips was increasing at the expense of CBD and section trips. However, since 1996 the sectional and CBD proportions have increased and crosstown trips have decreased. For transit trip distribution the trend of a smaller proportion of CBD trips while sectional and crosstown transit trips increase is continuing.

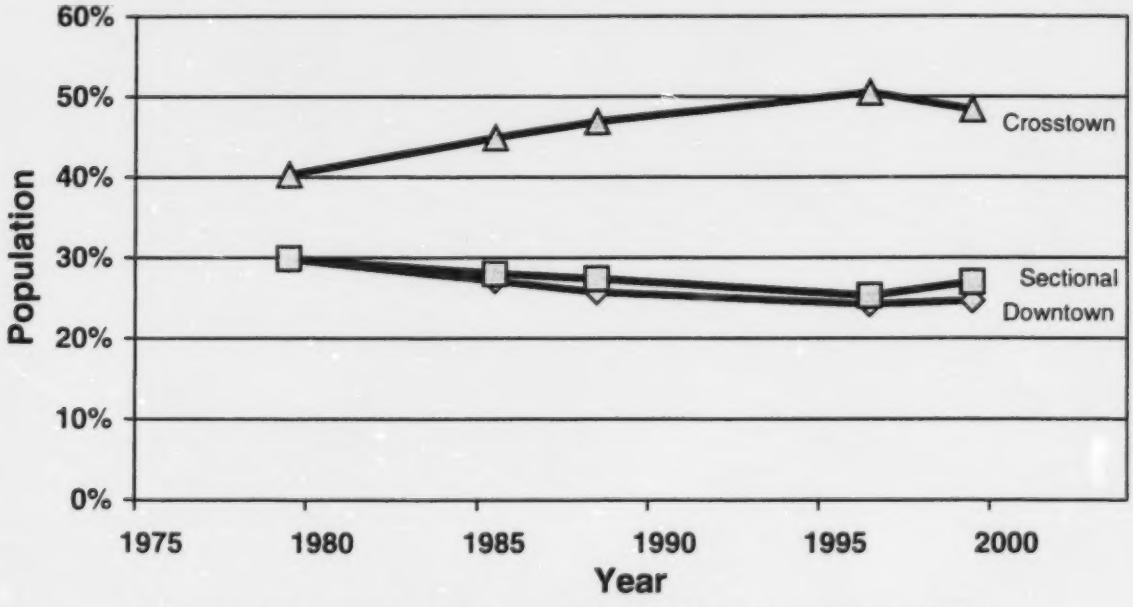


Figure 16: Changes in Person Trip Distribution – 1979 to 1999

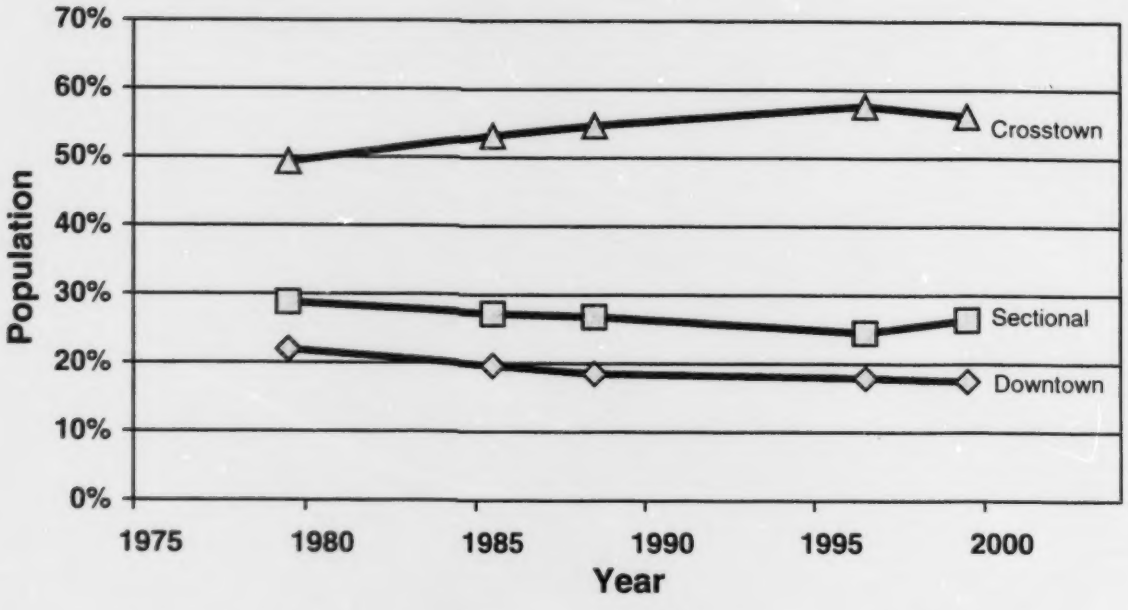


Figure 17: Changes in Person Auto Trip Distribution – 1979 to 1999

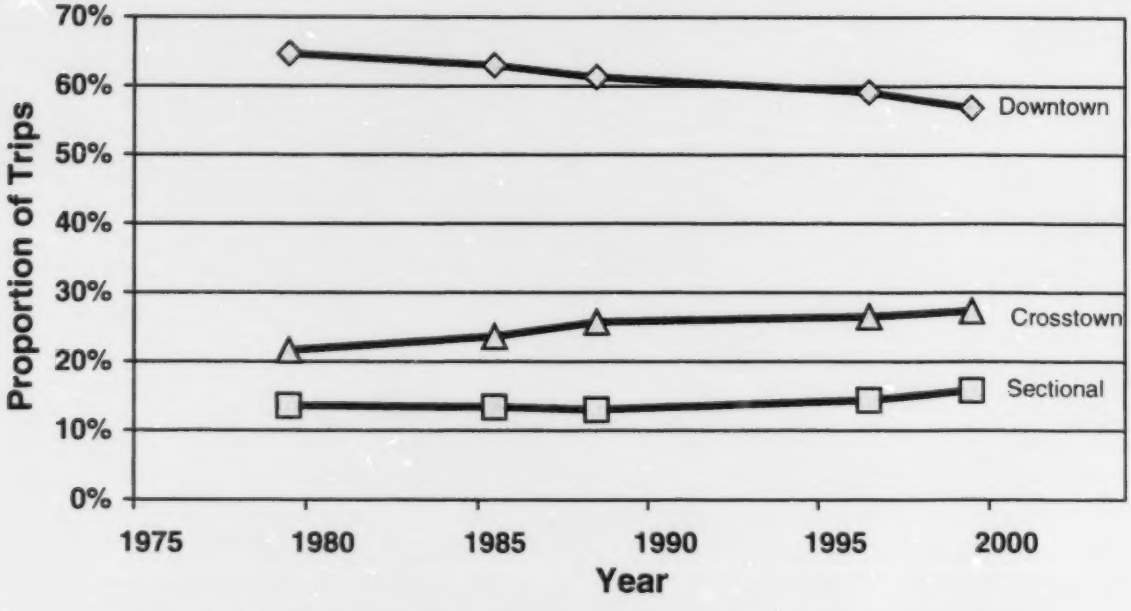


Figure 18: Changes in Person Transit Trip Distribution – 1979 to 1999

5.0 MODE OF TRAVEL

The modes of travel for daily work trips, described in this section, fall into three categories:

- auto (both driver and passenger);
- transit; and
- walk.

"Other" modes of travel, such as bicycle, motorcycle, and handibus account for only 1% of daily travel for work and are not included in the exhibits as the proportions would be fractional.

In general the automobile dominates travel for daily work trips. On a city wide basis the mode of travel is as follows:

• auto	78.0%
• transit	15.4%
• walk	5.2%
• other	1.3%

The relative proportions of the mode of travel varies depending on the section of the city where the trip originates. They also vary dramatically depending on whether the trip is destined to the downtown or a non-downtown location.

Figure 19 shows the mode of travel **from each section to the Downtown**. The walk mode is only a factor in those sections that border the downtown or the downtown itself.

The Northeast has the highest modal split to transit for Downtown trips (51%). Of the suburban sections, the Southwest has the lowest transit modal split (32%).

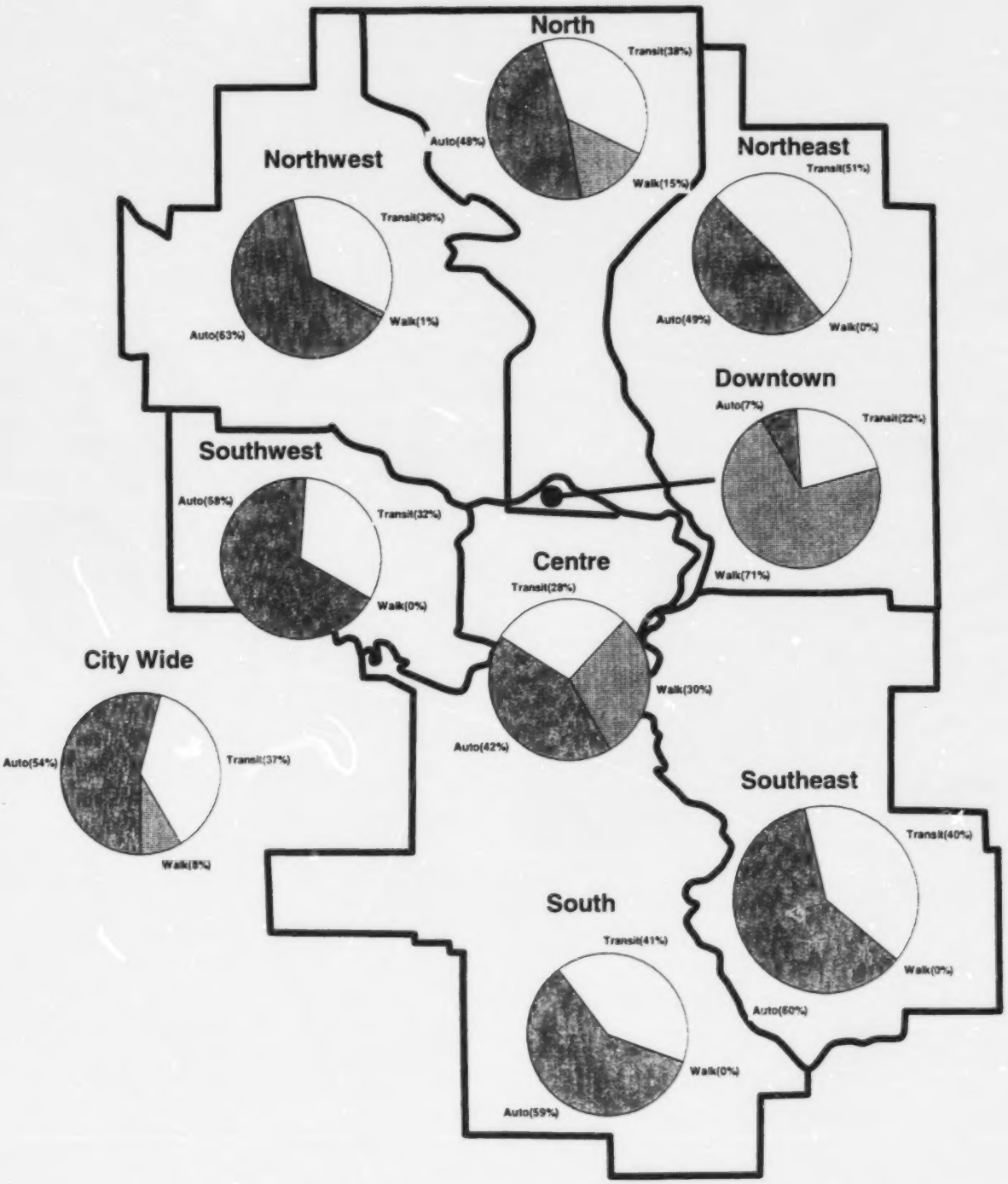


Figure 19: Mode of Travel for Downtown Work Trips - 1999

Overall, the auto mode accounts for 86% of daily travel to non-downtown locations.

Figure 20 shows the modal split **from each section to non-Downtown** sections. In all areas the auto mode dominates. Only from the Downtown and Centre do transit and walk modes account for more than 15% of trips.

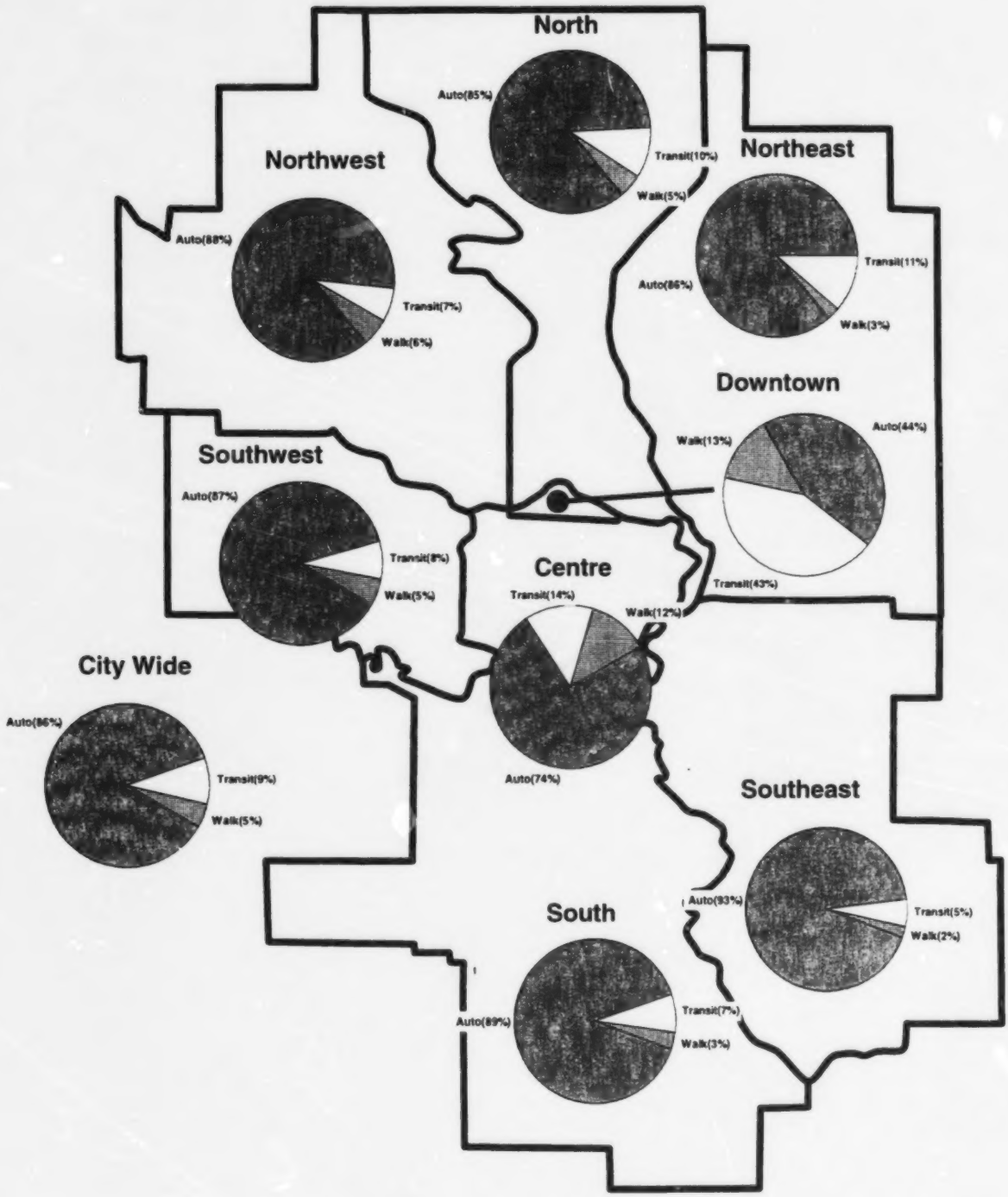


Figure 20: Mode of Travel for Non Downtown Work Trips - 1999

5.1 TRANSIT MODAL SPLIT TRENDS

In this chapter, the term "transit modal split" represents transit trips as a proportion of the sum of auto and transit trips. Trips by walk and other modes are not included. Modal split, when defined this way, expresses transit as a proportion of the "motorized" modes. Historic data since 1971 is provided.

The city wide modal split reached a high of 20% in 1979 and has declined up until 1996. Between 1996 and 1999 the city wide modal split has increased. Figure 21 shows the **transit modal split from the home section to all other sections**. In other words, from the Northwest to every other section. In this example, the 'home' is in the Northwest and the 'job' could be in any section.

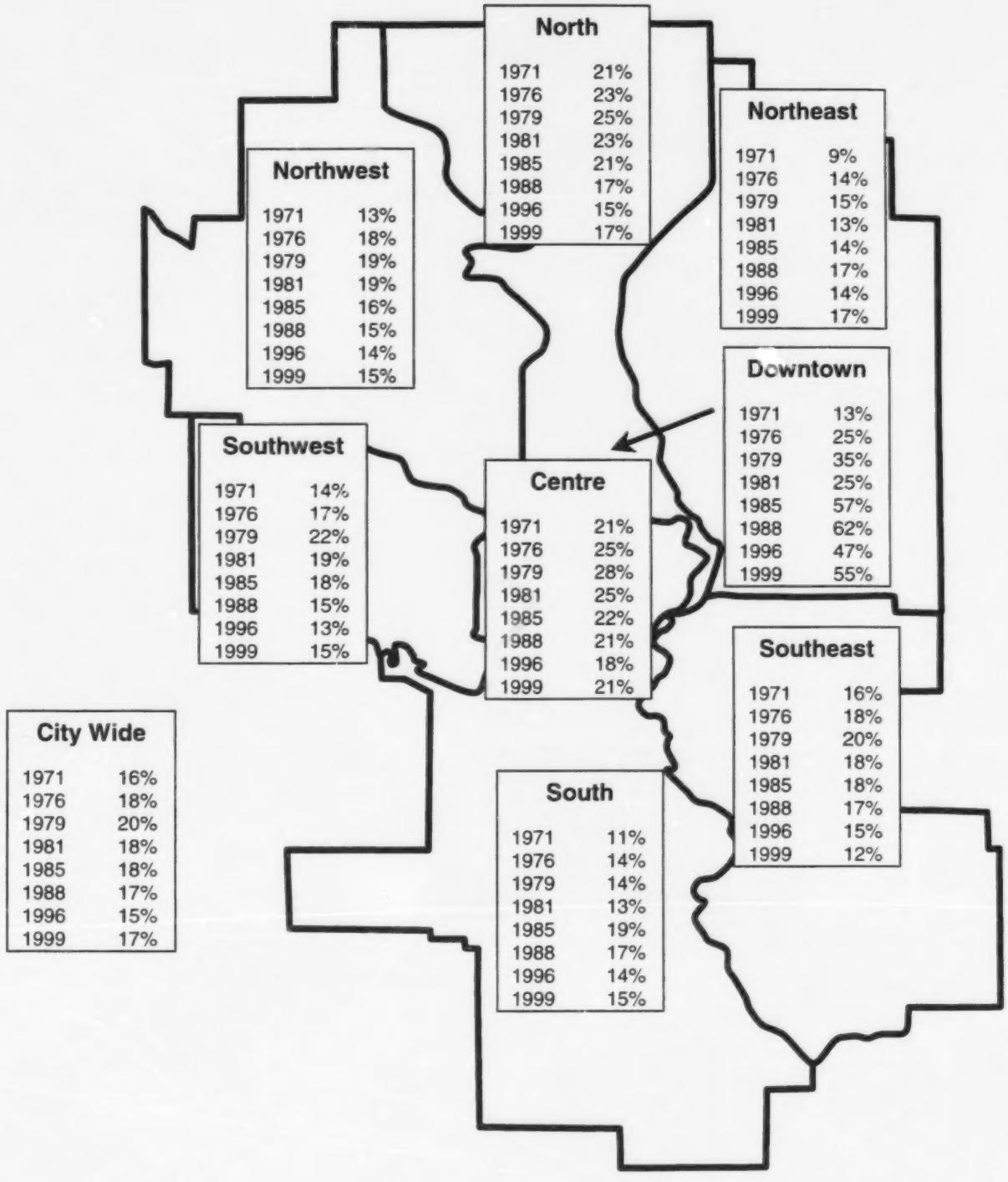


Figure 21: Transit Modal Split for Work Trips from the 'Home' Section to Every Other Section - 1971 to 1999

Figure 22 shows the **transit modal split to the place of work section**. Compared to Figure 21, this data examines the destination, rather than the origin of the transit trip. In other words for every section to the Northwest. In this example the 'home' could be any section and the 'work' is in the Northwest.

The Figure shows a recovery of the modal split especially for the Downtown area. All other areas showed stable or increasing transit modal splits.

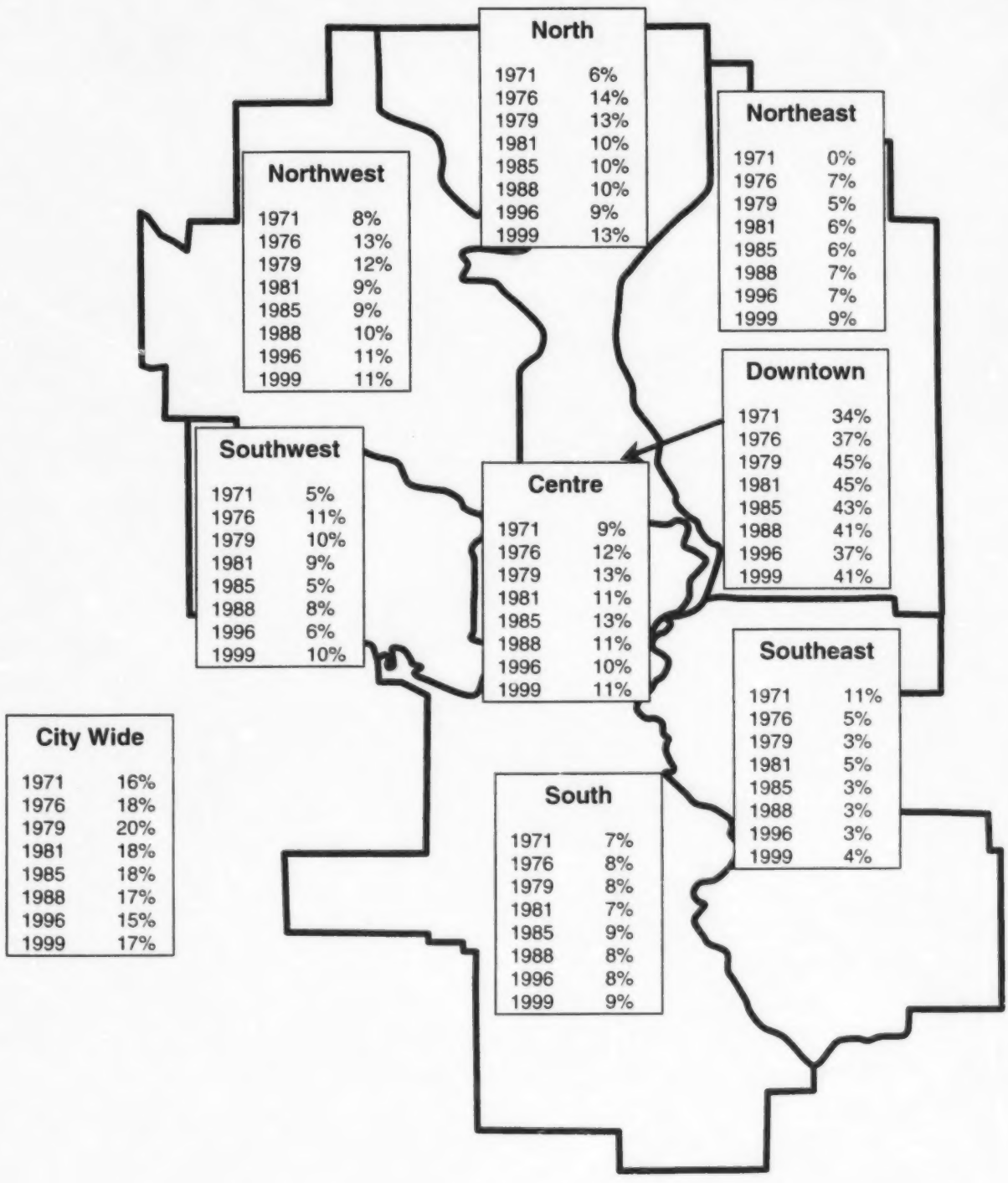


Figure 22: Transit Modal Split for Work Trips from Every Section to the Place of Work Section - 1971 to 1999

Figure 23 shows the **transit modal split from the home section to the Downtown**. On a city wide basis, the transit modal split for daily work trips to the downtown reached a high of 45% in the 1979 and 1981 surveys. The modal split declined to 37% in 1996. By 1999 the CBD modal split recovered to 1988 levels.

For all sections of the city except the South, Southeast and Northeast, the transit modal split to the downtown peaked in 1979/1981. The Southeast reached a peak earlier - in 1976 - and has followed the city wide pattern of decline since then. The South peaked later - in 1985 - and then followed the city wide pattern. The Northeast, however, has fluctuated over the 1979 to 1996 period. All sections showed an increase in transit modals split from 1996 to 1999.

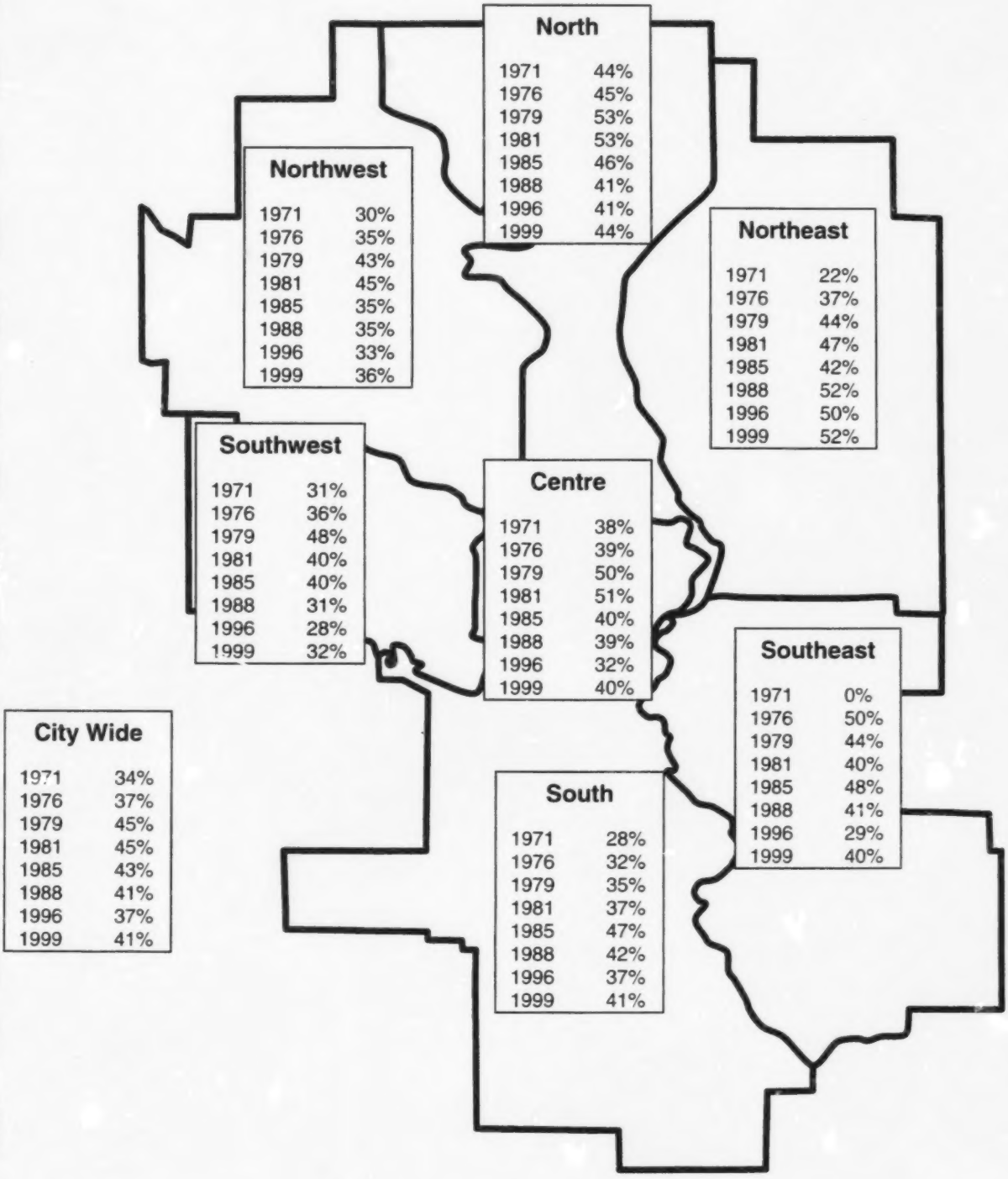


Figure 23: Transit Modal Split for home to work trips to downtown from home - 1971 to 1999

Summary

Overall the results of the 1999 Civic Census Travel to Work Survey show a significant diversion from the moderate growth trend found between 1991 and 1996.

- Since 1996 the City has experienced an increase in growth in both population and jobs.
- The population growth is concentrated on the outer edges of the city. The population split between east and west is not changing and is weighted toward the west.
- Much of the population growth has been in areas where the transit modal split is below average.
- Employment in Calgary has grown to 463,500, a jump of 60,000 jobs in the last three years. This exceeds the previous job growth high between 1979 – 1981 when employment increased by 53,000 jobs.
- Over 54.3% of Calgarians are employed both full time and part time, exceeding the previous high of 52.5% in 1981.
- Calgarians working at home have increased marginally from 22,800 to 23,000 in the last three years.
- Figures show that there are 102,100 jobs in the downtown held by Calgarians, an increase of 16% or 13,800 in the last three years. This breaks the previous record growth in downtown jobs set in the period between 1979 - 1981. Based on previous surveys there are an additional 4,600 employees who live outside of Calgary that work downtown making the total of downtown jobs 106,700.
- One third of the new jobs created are in the southeast and northeast Industrial areas.
- The trend of constantly decreasing modal split to transit has reversed and modal split is increasing, especially to the downtown.
- The survey shows that 16.5% of all Calgarians take Calgary Transit to get to work up from 14.5% three years ago.
- Calgary Transit is the mode of transportation for 41% of Calgarians who work downtown, up from 37% in 1996.
- Crosstown travel appears to be abating somewhat since 1996.

- The proportion of Home to Work trips that are made during the morning peak hour continues to decline.

- The automobile remains the primary mode for work trips accounting for 78.0% of total work trips.

APPENDIX A - ORIGIN - DESTINATION TABLES

The tables in this section show the distribution of jobs and trips between the home sections and the work sections.

Table A-1 shows the distribution of all **jobs** in the city. People who work at home are assigned to the area where they live for the place of work. People who work beyond daily commuting distance are included under External. People with no fixed place of work are assigned to the area they first travel to, if that is available, or to other if no first place of work is available.

Table A-2 shows the distribution of home to work **trips**. This excludes people who work at home or beyond daily commuting distance. The table does not take into account work attendance. As noted earlier not all people who work, work on any given day.

Table A-3 shows the distribution of home to work trips by **Auto drivers and Auto passengers**.

Table A-1; Distribution of Jobs by Home and Place of Work

	Northwest	North	Northeast	Southeast	Downtown	Centre	South	Southwest	External	Other	Total
Northwest	26400	5600	10300	1800	21700	9200	2900	1900	3400	3400	86600
North	7300	11500	13400	2600	15000	8900	2500	1300	2800	2700	68000
Northeast	3800	5600	34000	10600	13100	14100	4400	1400	4400	4100	95500
Southeast	600	700	3400	5800	5000	5000	3900	500	1200	700	26800
Downtown	400	300	400	100	3300	700	200	0	100	100	5600
Centre	3200	1700	4400	1600	13000	13900	3300	1400	2000	1900	46400
South	3400	1800	8000	6500	20200	16300	30200	2100	3800	2900	95200
Southwest	3200	1200	3000	1400	10800	6700	3000	7300	1500	1300	39400
Total	48300	28400	76900	30400	102100	74800	50400	15900	19200	17100	463500

Table A-2: Origin - Destination Table for All Home to Work Trips

	Northwest	North	Northeast	Southeast	Downtown	Centre	South	Southwest	External	Other	Total
Northwest	20900	5400	10100	1800	21400	9000	2800	1800	1800	3200	78200
North	7000	8200	13200	2600	14700	8700	2400	1200	1500	2700	62200
Northeast	3700	5500	30700	10400	13000	13900	4400	1300	2900	4100	89900
Southeast	600	700	3300	4400	5000	4900	3800	500	600	700	24500
Downtown	300	200	400	100	3000	700	200	0	100	100	5100
Centre	3100	1700	4300	1500	12700	10900	3200	1400	1100	1800	41700
South	3400	1800	7800	6400	20000	16000	23900	2100	2200	2700	86300
Southwest	3100	1200	3000	1300	10700	6500	2900	4800	900	1200	35600
Total	42100	24700	72800	28500	100500	70600	43600	13100	11100	16500	423500

Table A-3: Origin - Destination Table for All Home to Work Auto Person Trips

	Northwest	North	Northeast	Southeast	Downtown	Centre	South	Southwest	External	Other	Total
Northwest	16000	4900	9700	1700	13100	8000	2700	1800	1700	2900	62500
North	6000	5400	12000	2400	6900	7200	2300	1100	1500	2300	47100
Northeast	3300	4800	25200	9700	6200	12000	3700	1100	2800	3800	72600
Southeast	600	600	3200	3800	3000	4500	3500	400	600	600	20800
Downtown	100	100	200	100	200	300	100	0	100	100	1300
Centre	2400	1300	3700	1400	5200	6500	2500	1000	1100	1600	26700
South	3000	1600	7500	6200	11700	14200	19900	1900	2100	2600	70700
Southwest	2800	1100	2700	1300	7100	5800	2700	3300	800	1100	28700
Total	34200	19800	64200	26600	53400	58500	37400	10600	10700	15000	330400

Table A-4 shows the distribution of home to work trips made by **transit**. Park n' ride and Kiss n' ride are included.

Table A-5 shows the distribution of home to work **walk** trips.

Table A-6 shows the distribution of home to work trips made by **other modes**.

Table A-4: Origin – Destination Table for Home to Work Transit Person Trips

	Northwest	North	Northeast	Southeast	Downtown	Centre	South	Southwest	External	Other	Total
Northwest	1600	400	300	0	7500	900	100	0	0	200	11000
North	800	1000	1000	100	5400	1100	200	100	0	200	9900
Northeast	500	700	3600	600	6700	1800	600	200	0	200	14900
Southeast	100	0	100	100	2000	300	200	0	0	100	2900
Downtown	200	100	200	0	700	200	100	0	0	0	1500
Centre	600	300	500	100	3500	1100	600	300	0	200	7200
South	300	200	300	200	8100	1600	1800	200	0	200	12900
Southwest	300	100	200	0	3300	600	100	300	0	100	5000
Total	4400	2800	6200	1100	37200	7600	3700	1100	0	1200	65300

Table A-5: Origin – Destination Table for Home to Work Walk Person Trips

	Northwest	North	Northeast	Southeast	Downtown	Centre	South	Southwest	External	Other	Total
Northwest	2800	100	0	0	300	0	0	0	0	0	3200
North	100	1700	0	0	2100	300	0	0	0	0	4200
Northeast	0	0	1600	100	0	0	0	0	100	100	1900
Southeast	0	0	0	400	0	0	0	0	0	0	400
Downtown	0	0	0	0	2100	200	0	0	0	0	2300
Centre	100	100	0	0	3600	2800	100	0	0	0	6700
South	0	0	0	0	0	100	1900	0	100	100	2200
Southwest	0	0	0	0	0	100	0	1100	0	0	1200
Total	3000	1900	1600	500	8100	3500	2000	1100	200	200	22100

Table A-6: Origin – Destination Table for Home to Work Other Person Trips

	Northwest	North	Northeast	Southeast	Downtown	Centre	South	Southwest	External	Other	Total
Northwest	500	100	0	200	600	0	0	0	0	100	1500
North	100	200	0	100	400	100	0	0	0	100	1000
Northeast	0	0	100	0	100	300	0	0	100	0	600
Southeast	0	0	100	100	0	0	0	0	0	0	200
Downtown	0	0	0	0	0	100	0	0	0	0	100
Centre	0	100	100	400	400	100	100	0	0	0	1200
South	0	0	0	100	200	0	200	0	0	0	500
Southwest	100	0	0	100	200	0	100	100	0	0	600
Total	700	400	300	1000	1900	600	400	100	100	200	5700

APPENDIX B
SURVEY FORM

THE CITY OF CALGARY
TRANSPORTATION DEPARTMENT

1999 CIVIC CENSUS
TRAVEL TO WORK SURVEY

WORK TYPE CODES

1 - Work at fixed location outside of home
2 - Telecommuter
3 - Work at home
4 - No fixed workplace (i.e. taxi driver)
5 - Destination (workplace) may change from day to day (i.e. construction)
6 - Work at more than one workplace during the day (i.e. salesman)
7 - Workplace beyond daily commuting distance

TRAVEL TO WORK CODES

AUTO DRIVER
1 - No passengers
2 - One passenger
3 - More than one passenger

AUTO PASSENGER
4 - Only passenger
5 - Yourself and other passengers

6 - Use Transit
7 - Walk
8 - No trip made
9 - Other (specify in comments)

B - Bicycle
T - Taxi
M - Motorcycle
H - Handibus

EMPLOYED PERSON NUMBER	WORK TYPE CODE	TRAVEL TO WORK CODE	ARRIVAL TIME AT WORK HOUR	MINUTE	AM / PM	DESTINATION (WORKPLACE) BUILDING NUMBER	STREET NAME OR NUMBER	TYPE	QUAD
					☐ AM ☐ PM				
COMMENTS									

EMPLOYED PERSON NUMBER	WORK TYPE CODE	TRAVEL TO WORK CODE	ARRIVAL TIME AT WORK HOUR	MINUTE	AM / PM	DESTINATION (WORKPLACE) BUILDING NUMBER	STREET NAME OR NUMBER	TYPE	QUAD
					☐ AM ☐ PM				
COMMENTS									

EMPLOYED PERSON NUMBER	WORK TYPE CODE	TRAVEL TO WORK CODE	ARRIVAL TIME AT WORK HOUR	MINUTE	AM / PM	DESTINATION (WORKPLACE) BUILDING NUMBER	STREET NAME OR NUMBER	TYPE	QUAD
					☐ AM ☐ PM				
COMMENTS									

EMPLOYED PERSON NUMBER	WORK TYPE CODE	TRAVEL TO WORK CODE	ARRIVAL TIME AT WORK HOUR	MINUTE	AM / PM	DESTINATION (WORKPLACE) BUILDING NUMBER	STREET NAME OR NUMBER	TYPE	QUAD
					☐ AM ☐ PM				
COMMENTS									

EMPLOYED PERSON NUMBER	WORK TYPE CODE	TRAVEL TO WORK CODE	ARRIVAL TIME AT WORK HOUR	MINUTE	AM / PM	DESTINATION (WORKPLACE) BUILDING NUMBER	STREET NAME OR NUMBER	TYPE	QUAD
					☐ AM ☐ PM				
COMMENTS									

CENSUS BOUR NO	CENSUS PAGE NO	CENSUS LINE NO	HOME ADDRESS SUITE NUMBER	BUILDING NUMBER	STREET NAME OR NUMBER	TYPE	QUAD

TOTAL JOBS

EMPLOYED PERSONS

APPENDIX C
SURVEY ACCURACY

APPENDIX C - SURVEY ACCURACY

The results of all surveys are subject to some uncertainty, and this survey is no exception. The larger the sample size, the lower the uncertainty and the smaller the number or proportion, the greater the uncertainty. This survey has a sample size of 39,477 cases. This is a large sample size, which will result in a low level of uncertainty. However, many numbers in this report are small, and it is recommended that the level of uncertainty be considered when drawing conclusions based on the survey results.

Table A-8 shows the 95% Confidence Intervals for a variety of values that can be found in the 1999 Work Travel Survey. The true values will fall between the lower and upper limits 19 times out of 20. Similar values can be estimated for the proportions reported, but the limits will vary depending on how many samples were used to calculate the proportion. If the accuracy of any of the data may be a concern, please contact the Data Management and Forecasting Division of Land Use and Mobility for a more detailed evaluation.

Table A-7: 95% Confidence Intervals for 1999 Travel to Work Survey

Value	lower limit	upper limit
100	36	164
250	148	352
500	356	644
1,000	797	1,203
2,500	2,180	2,820
5,000	4,548	5,452
10,000	9,365	10,635
25,000	24,012	25,988
50,000	48,643	51,357
100,000	98,201	101,799